

AMERICAN SOCIETY OF CIVIL ENGINEERS

PROCEEDINGS

VOL. 55

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NO. 10

SOCIETY AFFAIRS

RECENTLY ELECTED HONORARY MEMBERS

Baron Koi Furuichi

Baron Koi Furuichi was born at Himeji, Japan, in 1854, and studied engineering in France from 1875 to 1880. He was created a Baron in 1919, and is now a member of the House of Peers of the Japanese Empire. His professional career includes service as Director of the Public Works Bureau, Home Office; Vice-Minister of Communications; Director-General of the Government Railways; Director of Seoul-Fusan Railway (1903-1907); President of Tokyo Subway Company, until 1925. Since 1924, he has been a member of the Privy Council of the Japanese Government. He is at present an Emeritus Professor of the Tokyo Imperial University, having previously been Dean of the Engineering Colleges of the University. He is also a member of the Imperial Academy.

Baron Furuichi is one of the leading Civil Engineers of Japan. He was President of the World Engineering Congress held in Tokyo in October, 1929, and was also President of the Sectional Meeting of the World Power Conference held at the same time.

Edwin Augustus Fisher

Edwin Augustus Fisher, M. Am. Soc. C. E., was born at Royalston, Mass., on July 17, 1847. His training for the Engineering Profession was of a practical nature. Beginning as Rodman with the Holyoke and Westfield Railroad Company, in 1871, he held, successively, higher positions in railroad work until, at the time of his election to the grade of Member in the Society, in 1888, he was Assistant Engineer of the Western New York and Pennsylvania Railroad Company, with offices in Rochester, N. Y. Since then that city has been his home.

Mr. Fisher's chief interest, however, has been in the field of municipal en-

gineering and city planning. He was Engineer for the Town of Westfield, Mass., in 1873, and twice again at later dates, serving in the interim on the construction of its water-works and in bridge construction elsewhere in the State of Massachusetts. He became City Engineer of Rochester, N. Y., in 1897, and has been in the employ of that city continuously ever since, until his recent retirement to private consulting practice.

When the Rochester Engineering Society was founded, in 1897, Mr. Fisher was its first President, having already served as Chairman of the Section of Engineering of the Rochester Academy of Science, from which the Society developed. In 1922, at the Twenty-Fifth Anniversary of the Rochester Engineering Society, he was made its first Honorary Member.

Mr. Fisher was elected a Director of the Society for the three-year term from 1905 to 1907, inclusive. He has always been active in the work of the City Planning Division of the Society, serving on the Executive Committee of the Division from its organization in 1923 until 1925.

Gustav Lindenthal

Gustav Lindenthal, M. Am. Soc. C. E., was born at Brünn, Moravia (old Austria, now Czechoslovakia), on May 21, 1850. His education was obtained at Brünn and Vienna, and he has received the honorary degree of Doctor of Engineering from three European universities. He was engaged in surveys and construction of railways and bridges in Austria and Switzerland until 1874, in which year he came to the United States.

Mr. Lindenthal was an Assistant Engineer on the construction of buildings for the Centennial Exposition in Philadelphia, Pa., from 1874 to 1877; Com-

puter with the Keystone Bridge Company, Pittsburgh, Pa., in 1877 and 1878; Bridge Engineer for the Atlantic and Great Western Railroad Company, in Cleveland, Ohio, until 1881; and then began his independent work as Consulting Engineer. From 1881 to 1892 he maintained an office in Pittsburgh, and since that time has made his headquarters in New York City.

During 1902 and 1903, Mr. Lindenthal was Commissioner of Bridges of the City of New York. He later acted as Consulting Engineer for the New York Tunnels of the Pennsylvania Railroad, under both the Hudson and the East Rivers.

Mr. Lindenthal's best known work is the design and construction of the steel arch bridge at Hell Gate, over the East River. For this he has recently been awarded the First Prize in the Pebe Hobson Fowler Award for Engineering Architecture. He has twice received the Thomas Fitch Rowland Prize, for papers published in *Transactions*. He is a member of numerous engineering societies, both in this country and abroad, and is, at present, Chief Engineer of the North River Bridge Company.

George Fillmore Swain

George Fillmore Swain, Past-President Am. Soc. C. E., was born in San Francisco, Calif., on March 2, 1857. He received the degree of Bachelor of Science from the Massachusetts Institute of Technology in 1877, and afterward studied at the Polytechnic School of Berlin. He has twice been awarded the honorary degree of Doctor of Laws.

Professor Swain's distinguished record as an engineer, educator, author, and public servant is well known to the members of the Society. It includes twenty-two years as Hayward Professor of Civil Engineering at the Massachusetts Institute of Technology and twenty-one years as Gordon McKay Professor of Civil Engineering at Harvard University; twenty-seven years as Consulting Engineer to the Massachusetts Railway Commission, and twenty-four years as Member and Chairman of the Boston Transit Commission; a continuous record of important contributions to engineering literature, since 1880, including eight books of major importance in the fields of hydraulics, structures, and education; and a long record as Consultant in structural engineering and valuation.

His work for the Society has been of great extent and high quality. He has been a frequent contributor to its

publications and a valued worker on its committees during his forty-six years of membership. He has served as Director (1901-03), Vice-President (1908-09), and President (1913), and is, to-day, second in order of seniority of the living Past-Presidents.

Professor Swain is especially well-known for his great service to the Engineering Profession in the educational field. Perhaps no other one man has contributed so much, so consistently, and for so long a period to the development of correct methods of thought and high standards of scholarship in the field of engineering education. For his work in this, his life career, he was honored by his fellow professors in receiving the first award of the Lamme Medal, for illustrious success in engineering teaching.

IMPRESSION OF EUROPEAN HYDRAULICS

Only last summer the latest Freeman Fund Scholar, James G. Woodburn, Assoc. M. Am. Soc. C. E., took up his studies of European hydraulic practice. One of his first letters, dated October 7, 1929, after he had had an opportunity of only a few weeks at his new duties, relates some of his early impressions and gives a picture of how the present work in European hydraulic laboratories has appealed to a comparative stranger.

Some extracts from his letter illustrate the advances now taking place. For example, he says,

"The thing which impressed me most about the Dresden laboratory was the big glass flume. It is 90 ft. long, a little over 3 ft. wide and 2 ft. deep. Both sides and the bottom are of glass throughout the entire length. The flume is built in six sections. The glass plates are, therefore, about 15 ft. in length, and are about $\frac{5}{8}$ in. thick. There is also a 'small' glass flume about one-third the size of the large one, and a tilting metal flume about 30 ft. long."

In another place, at the Technische Hochschule at Hannover, Germany, he spoke of some of the engineering departments, including that of hydraulics, which "are in the process of building a new laboratory, and it is going to be a beauty. It forms one wing of the new Hochschule Building, and in size and design is not unlike an athletic field house at a modern American university. The length of the laboratory will be over 400 ft. and the width about 70 ft."

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Not all the German laboratories, however, are nearly so fortunate in this respect. For instance, in the Technische Hochschule at Braunschweig, Germany, "On a plot of ground less than 20 by 50 ft. in dimensions, with equipment which could certainly be reproduced for \$1000, with a maximum flow of water of about a cubic foot per second, and with the simplest of measuring and regulating devices, experiments have been performed which have been the basis of many important technical articles and reports."

OCTOBER SOCIETY MEETING

A regular meeting of the Society was called at 8:00 P. M., on Wednesday, October 16, 1929, in the Engineering Societies Building, just prior to the monthly meeting of the New York Section. The presiding officer, George L. Lucas, Director of the Society, called attention to the Constitutional requirement for a meeting to be held during October each year. Announcement was made of the recently chosen nominees for Society officers for 1930. There being no further business, the meeting was adjourned.

ENGINEERING EDUCATION IN THE UNITED STATES AND IN EUROPE

The latest publication of the Society for the Promotion of Engineering Education, with which this Society and other engineering bodies are affiliated, is from the pen of the former Director, William E. Wickenden, and is entitled: "A Comparative Study of Engineering Education in the United States and in Europe."

In this imposing book of 275 pages, Dr. Wickenden has given the results of his wide studies in America and in Europe. Separate chapters are devoted to a consideration of the historical development of engineering education in general; engineering education in France; the various practices in the British Isles, and the system of education of engineers in Central Europe. Finally, an entire chapter is given over to an analysis of the situation in the United States.

In this manner a general survey is obtained of world-wide conditions in engineering education and especially as to their influence on American types and standards. The book is systematically laid out, and a detailed table of contents

makes it a simple matter to find the treatment of any specific topic.

Bulletin No. 16 is the official title of this publication. Reprint copies are available at a cost of 40 cents each, by addressing the Lancaster Press, Lancaster, Pa.

ADMINISTRATION OF THE WASHINGTON AWARD

Annually the Washington Award, a bronze plaque, is presented to an engineer by his fellows on account of accomplishments which pre-eminently promote the happiness, comfort, and well-being of humanity. Although the prize is sponsored by the Western Society of Engineers which holds a fund now amounting to \$10 000 donated by John W. Alvord, M. Am. Soc. C. E., the award is made by a Commission representing the Western Society of Engineers, the American Society of Civil Engineers, the American Institute of Mining and Metallurgical Engineers, the American Society of Mechanical Engineers, and the American Institute of Electrical Engineers. The proceeds of the fund are used to provide the annual token and to entertain the guest of honor at the presentation.

Although previous recipients of the Award have included famous men, such as President Hoover and Orville Wright, it is the purpose of the Commission to bestow the Award when merited as a token of public and professional devotion even when the recipient is little known. This Award is intended to cover all the various branches of engineering in the broadest sense and is not limited to residents of the United States, or membership in any Society or organization. Members of this Society possessed of information deemed helpful to the Washington Award Commission may communicate with the representatives of this Society, Daniel W. Mead and Warren R. Roberts, Members, Am. Soc. C. E.

ENGINEERING ABSTRACTS, 1930

As the time approaches when subscriptions for "Engineering Abstracts" for the coming year are receivable, the details whereby these valuable publications of the Institution of Civil Engineers are made available, will bear repeating.

An agreement with the Institution whereby members of the Society are entitled to subscribe at reduced prices, has been in effect for about a year. For this period, arrangements have been made

for subscriptions covering one-half year only. In the future, however, issues may be sent to members only for the entire year.

These reviews of current engineering literature throughout the civilized world are becoming well-known to American engineers and are now being valued at their real worth, much the same as they have been in Europe for many years past.

Orders must be made in advance and payments likewise. The first issue for 1930 will appear in January, so that any members who wish to subscribe or renew their subscription should do so at once. The charge is \$5.00 annually. Orders accompanied by the necessary draft to the order of the Institution of Civil Engineers, should be sent direct to the Secretary, Great George Street, Westminster, S. W. 1, London, England.

APPOINTMENTS OF SOCIETY REPRESENTATIVES

Members have been appointed to act for the Society in the following capacities:

On Sectional Committee on Safety Code Construction of American Standards Association: L. C. Wason, M. Am. Soc. C. E.

On American Engineering Council for the term ending January 1, 1932: Baxter L. Brown, L. L. Calvert, John F. Coleman, A. J. Dyer, Frank M. Gunby, Charles H. Paul, and George T. Seabury, Members, Am. Soc. C. E.

On Council of the International Federation for Housing and Town Planning, Rome, Italy, September 12-19, 1929; C. E. Grunsky, Past-President, Am. Soc. C. E., and Harold M. Lewis, Harland Bartholomew, U. E. Martini, and Charles M. Spofford, Members, Am. Soc. C. E.

As Assistant Treasurer of the Society to fill the vacancy caused by the death of W. J. Boucher, M. Am. Soc. C. E.: Ralph R. Rumery, M. Am. Soc. C. E.

VISITING BELGIAN ENGINEER

Recently American engineers have been pleased to meet and entertain Professor Albert Van Hecke, Head of the Civil Engineering Department of Louvain University, Belgium. In particular, Professor Van Hecke is interested in studying American methods of engineering research especially the recent advances. Therefore, his time has been devoted to visiting educational institu-

tions and laboratories, as well as Government research bureaus.

An additional phase of his journey in America is the delightful social contact with American engineers. One such event was his participation in the Edison Celebration at Menlo Park, N. J., during the latter part of October. Shortly after his arrival, a dinner was given in his honor in New York, at which representatives of the Society, United Engineering Society, and Engineering Foundation, among others, met and welcomed him.

As one of his important duties, Professor Van Hecke is assisting in developing American interest in the Steel Construction Congress to be held in Liège, Belgium, during the latter part of the summer of 1930. The Society and the American Institute of Steel Construction will co-operate in the Congress through the attendance of delegates and the presentation by members of papers and addresses. This Congress is part of the celebration of the One Hundredth Anniversary of Belgium's Independence.

During the several weeks of Professor Van Hecke's visit he has been able to strengthen the ties between American and Belgian engineers, so happily united in the bestowal of a conspicuous part of the Memorial Library at Louvain University.

GOVERNMENT MANUAL OF FIRST ORDER LEVELING

One of the recent publications of the U. S. Coast and Geodetic Survey is a new treatise entitled "Manual of First Order Leveling". It should attract considerable interest from Civil Engineers and Surveyors, as it contains a thorough discussion of field methods and office computations, in accordance with which all the first order survey work of this Government Bureau is executed.

One section covers general instructions for actual work, together with a thorough discussion of instruments, errors, party organizations, and the setting of benchmarks. A description of field records and computations is also included.

Another section treats of office computations. It contains a full discussion of the important question of corrections and gives detailed instruction for adjusting level nets. This booklet may be ordered by those interested from the Superintendent of Public Documents, Government Printing Office, Washington, D. C. It is called Special Publication No. 140, and the price is 30 cents.

Meetings of the Board of Direction

This is an abstract of the notes of the Secretary and subject to approval by the Board of Direction at its next meeting.

The Board met at Boston, Mass., on October 7 and 8, 1929; President Anson Marston in the chair; George T. Seabury, Secretary; and present, also, Messrs. Bell, Brillhart, Bush, Dennis, Dufour, Dyer, Eddy, Hammond, Johnston, Lucas, Morris, Nicholson, Norton, Pirnie, Reichmann, and Stevens.

Approval of Minutes of Board of Direction

On motion, the minutes of the meeting of the Board of Direction held on July 8 and 9, 1929, were approved.

John F. Coleman Nominated for President

The report of the Nominating Committee, which had been received in accordance with Article VII, Section 4, of the Constitution, was presented as follows:

"At a meeting of the Nominating Committee held in Boston, October 7, 1929, Mr. John F. Coleman was named as the official nominee for President for the year 1930."

Canvass of Ballot on Honorary Membership

Edward Augustus Fisher and Gustav Lindenthal, Members, Am. Soc. C. E., and George Fillmore Swain, Past-President, Am. Soc. C. E., were elected Honorary Members of the Society.

It was also reported that Baron Koi Furuichi, who was elected an Honorary Member at the July meeting, had accepted and that Honorary Membership would be conferred on him by the Delegates and Members of the Society in attendance at the World Engineering Congress in Tokyo this fall.

Proposed National Legislation Relating to Bridges

The provision of certain measures before Congress (Bill S 220) "to regulate the construction of bridges over navigable waters of the United States, and for other purposes," and two other bills (H. R. 1213 and H. R. 107) dealing with the same subject, were discussed, and the following resolution was adopted:

"Moved that the American Engineering Council be advised that the Board of Direction of the American Society of Civil Engineers is definitely opposed to Congressional action of any character imposing unreasonable limitations upon the financing, design, construction, and maintenance of toll bridges either inter, or intra, state.

"It is believed that such limitation as contemplated in Bill S 220 or other bills of similar import will make the construction of this type of bridge prohibitive; will tend to abridge the States' rights and to impair the status of existing projects."

Proposed Memorial to Major Pierre Charles L'Enfant Approved

The question of whether American Engineering Council should join in support of the movement of endorsing Bill H. R. 14120 "To authorize the construction of a memorial statue (for Major Pierre Charles L'Enfant) in the District of Columbia, and for other purposes," was discussed and, on motion, Council's support of the project was approved.

International Congress on Steel Construction, Liège, Belgium, 1930, and World Power Conference, Berlin, Germany, 1930

The Secretary was authorized to undertake the securing of a number of papers to be written by American engineers for presentation at these Congresses.

William J. Boucher

On motion, the following resolution on the death of William J. Boucher, M. Am. Soc. C. E., Assistant Treasurer of the Society, was adopted:

"Whereas, the Board of Direction has learned with profound regret of the death of W. J. Boucher, Assistant Treasurer of the Society; and

"Whereas, the Board of Direction has lost a loyal efficient officer and the Society a devoted member;

"Therefore, Be It Resolved: That the sympathy of the Board be extended to the members of his family, and this tribute to his service be entered upon the minutes of this meeting."

Ralph R. Rumery Appointed Assistant Treasurer

On motion, Ralph Rollins Rumery, M. Am. Soc. C. E., was appointed Assistant Treasurer of the Society at a salary of \$25 per year, to fill the vacancy created by the death of William J. Boucher, M. Am. Soc. C. E.

Rudolph Hering Medal

On motion, the report of the Executive Committee of the Sanitary Engineering Division recommending no award of the Rudolph Hering Medal for 1929, was adopted.

Local Section for Porto Rico Authorized

In response to a petition signed by twenty-seven members, the formation of a Local Section of the Society in Porto Rico was approved. The petition was accompanied by a copy of the Constitution and By-Laws, which were also approved with a few minor changes.

Local Section for New Mexico Approved

The formation of a New Mexico Section of the Society, was approved, it being understood that when the Constitution is received it will be in proper form and the requisite initial membership of twenty-five shall have been secured.

Allotments to Local Sections

In accordance with the recommendations of the Committee on Local Sections it was decided to allow the \$3 allotment to the following Local Sections: Arizona, Central Illinois, Cleveland, Colorado, Duluth, Florida, Georgia, Los Angeles, Louisiana, North Carolina, Sacramento, San Diego, San Francisco, Texas, and Virginia.

It was understood that all other Sections will receive a \$2 allotment for 1930, except where no request is received.

It was decided also to grant the newly formed Porto Rico Section an allotment equivalent to the amount of its Section dues. Similar action was taken in connection with the proposed New Mexico Section when its Constitution shall have been approved and the requisite initial membership secured.

Student Chapter Authorized at University of New Mexico

On recommendation of the Committee on Student Chapters, the formation of a Student Chapter of the Society at the University of New Mexico was approved.

Proposed Changes in Names of United Engineering Society and of Engineering Foundation

On motion, the proposal of the Board of Trustees of United Engineering Society to change the name of that Society to "Engineering Foundation, Inc." and the name of Engineering Foundation to "Engineering Societies Research Board", such changes to become effective January 1, 1930, was approved.

American Engineering Council

Seven representatives of the Society were appointed to serve on the Assembly of American Engineering Council for the term ending January 1, 1932, as follows: Baxter L. Brown, St. Louis, Mo.; L. L. Calvert, Philadelphia, Pa.; John F. Coleman, New Orleans, La.; A. J. Dyer, Nashville, Tenn.; Frank M. Gunby, Winchester, Mass.; Charles H. Paul, Dayton, Ohio; and George T. Seabury, New York, N. Y.

Registration of Engineers

The following motion relating to a uniform registration law was passed:

"It is the sense of the Board of Direction of the American Society of Civil Engineers that it accede to the resolution adopted at the Tenth Annual Convention of the National Council of State Boards of Engineering Examiners held at Yellowstone National Park on August 28, 1929, endorsing the suggestion that 'a recommended uniform registration law for professional engineers' be compiled by the Committee of the American Society of Civil Engineers, with the collaboration of committees of the National Council of State Boards of Engineering Examiners, American Society of Mechanical Engineers, American Institute of Electrical Engineers, American Railway Engineering Association, American Institute of Mining and Metallurgical Engineers, American Association of Engineers, and American Engineering Council. The Society's Committee is instructed to proceed as promptly as possible to effect that end."

Proposed Amendments to the Constitution

Three amendments to the Constitution were proposed and discussed, the Executive Committee being instructed to prepare an explanatory statement for issuance to the membership in each instance when the petitions shall have been received by the Secretary.

One of the proposed amendments was recommended by the Committee on Districts and Zones and would provide a new District and an additional Director.

Another of the proposals would reduce the number of Board Meetings to five in each year, on account of the fact that a recently adopted procedure for acting on applications has made Intermediate Board Meetings unnecessary.

The third proposal to amend the Constitution incorporated certain changes relative to membership qualifications.

Committee on Professional Conduct

The Committee on Professional Conduct reported on six matters that had been referred to it for consideration.

Society Activities

A plan for systematizing the non-technical activities of the Society and instituting certain new activities was discussed and adopted in principle, the President being authorized to appoint a Committee to study this whole matter and report back not later than December 15, 1929.

Specifications for Steel Railway Bridges

In 1925, a conference of representatives of the Society and of the American Railway Engineering Association was authorized to study the specifications of the two organizations for the purpose of harmonizing so far as practical the differences in the specifications for steel railway bridges of the Society and the American Railway Engineering Association. The report of the Conference comprising a general specification for steel railway bridges was authorized to be printed in *Proceedings** for the information of the membership and for constructive discussion by the profession.

* See *Papers and Discussions*, p. 2641.

Biographical Sketches of Official Nominees

The following are brief biographical sketches of the Official Nominees for the offices to be filled at the Annual Election of the Society on January 15, 1930:

John Francis Coleman

(Official Nominee for President)

Born November 23, 1866, Jefferson County, Mississippi (Public Schools, New Orleans, La., including High School, 1882)—1884-1885 Rodman, preliminary and location surveys, Guatemala Northern R. R.: 1885-1888 Instrumentman, Res. Engr., location and construction, Kansas City, Memphis & Birmingham R. R.: 1889 Constr. Engr., Philadelphia Smelting & Refining Co., Pueblo, Colo.: 1890 U. S. Observer, discharge observations, Mississippi River: 1891-1893 Asst. Engr., Tex. & Pac. Ry., maintenance of way: 1894 general practice: 1895 Div. Engr., N. O. & West. R. R., construction of Port Chalmette Terminals: 1896-1899 Prin. Asst. City Engr., New Orleans: 1900 to date general consulting civil engineering practice; railway location, construction, and valuation; other public utility valuation; land reclamation and drainage; river and harbor improvement; port development: Hon. M. and Past-Pres., Louisiana Eng. Soc.; Member and Past-Pres., Am. Inst. of Cons. Engrs.; Member, Am. Ry. Eng. Assoc.; Member, Am. Soc. C. E. (Director, 1915-1917; Vice-Pres., 1918-1919).

Frank Edward Winsor

(Official Nominee for Vice-President, Zone I)

Born November 16, 1870, Johnston (now Providence), R. I. (Brown Univ., Ph. B., 1891; C. E., 1892; A. M., 1896; Sc. D. (Honorary), 1929)—1891-1894 Instrumentman and Asst. Engr., Metropolitan Sewerage Comm. of Massachusetts: 1895 Res. Engr. on construction of sewerage system, Natick, Mass.: 1896-1902 Asst. Engr. and Div. Engr., Metropolitan Water Supply of Massachusetts: 1903 Asst. Engr. on investigation for additional water supply for City of New York: 1904-1905 Div. Engr. in charge of design and Prin. Asst. Engr., Charles River Basin Comm. of Massachusetts: 1906-1909 Div. Engr., and 1910-1915 Dept. Engr., on location and construction of Catskill Water-Works for City of New York (Southern Aqueduct Dept.): 1916-1926 Chf. Engr. on new water supply for City of Providence, R. I.: Oct. 1926 to date, Chf. Engr., Metropolitan District Water Supply Comm. of Massachusetts: Member, Am. Soc. C. E. (Director, 1922-1924); Pres., Boston Soc. of Civ. Engrs. (1929); Past-Pres., Providence Eng. Soc.; Past-Pres., New England Water-Works Assoc.; Member, Am. Water Works Assoc. and Brown Eng. Assoc.

Joseph Milton Howe

(Official Nominee for Vice-President, Zone IV)

Born July 30, 1874, Houston, Tex. (Mass. Inst. Tech., B. S., 1896; Univ. of Texas Law School 1896-1897)—1897-1899 Rodman and Instrumentman,

Santa Fé Ry.: 1899-1902 Asst. Engr. and Acting Engr., M. of W., Houston & Texas Central Ry.: 1903 Office Engr., So. Pac. R. R. (Atlantic System): 1904-1906 private practice; rice irrigation, petroleum engineering, and railroad grade revision work: 1906-1907 Chf. Engr. on mountain railroad in Mexico: 1907-1909 drainage and miscellaneous municipal work: 1909 to date in partnership with A. J. Wise, M. Am. Soc. C. E.; the firm constructs sewers, waterworks, and pavements for neighboring municipalities; oil storage and pipe lines; short-line railroads; drainage; and road work: Vice-Pres., Houston, (Tex.), National Bank; Director, Trust Co. of Texas; Trustee, Hermann Hospital Estate; Member, Am. Soc. C. E. (Director 1924-1926); Past-Pres., Texas Section, Am. Soc. C. E.; Member, Engineers (Pres.), University, Rotary, and Houston Clubs.

Ole Singstad

(Official Nominee for Director, District No. 1)

Born June 29, 1882, Lensvik, Norway (Polytechnic Inst. of Trondhjem, C. E., 1905)—1905 Transitman, C. R. R. of N. J.: 1906-1909 Virginian Ry., Norfolk, Va., design of railroad structures and Asst. Engr. in charge of railroad and bridge construction: 1909-1910 Hudson-Manhattan R. R., New York, designing work on Hudson River tunnels: 1910-1917 Public Service Comm., First Dist. of New York (Board of Transportation, New York City), in charge of design of rapid transit subways and tunnels in New York, Brooklyn, and under East River, including William St.-East River-Clark St. Tunnel and Flatbush Ave. Tunnel: 1917-1918 Chile Exploration Co., New York, in charge of Structural Design Dept.: 1918-1919 Barclay Parsons & Klapp, Cons. Engrs., New York City, in charge of laying out and estimating a comprehensive rapid transit system for large city; also prepared preliminary design, estimates, and report on a subaqueous vehicular tunnel: 1919 to date, New York State Bridge & Tunnel Comm. and the New Jersey Interstate Bridge & Tunnel Comm. (now New Jersey Holland Tunnel Comm.), on construction and operation of The Holland Tunnel; 1919-1925 Engr. of Designs; 1925-1927 Chf. Engr.; 1927 to date, Chf. Engr. and Supt. in charge of construction and operation: 1925-1928 Cons. Engr. on George A. Posey Tube, vehicular tunnel between Oakland and Alameda, Calif.: 1927 to date, Cons. Engr. on Detroit-Windsor Vehicular Tunnel between Detroit, Mich., and Windsor, Ont., Canada: Sept., 1929 to date, Advisory Engr. on design and ventilation of tunnel approach to Hudson River Bridge, Fort Washington, N. Y., to Fort Lee, N. J.: author of papers, "The Holland Tunnel" (Hudson River Vehicular Tunnel); "The Relation of Tunnels and Bridges to Traffic Congestion"; "A Year's Experience Operating Holland Tunnel"; "Ventilation of Vehicular Tunnels" (World Eng. Congress, Tokyo, 1929): Member, Am. Soc. C. E.; formerly Director, New York Section, Am. Soc. C. E.; Member, Am. Inst. of Min. and Metallurgical Engrs.; New York State Soc. of Professional Engrs. and Land Surveyors; and Am. Inst. of Cons. Engrs.

John Rodolph Slattery

(Official Nominee for Director, District No. 1)

Born January 31, 1877, Athens, Ohio (Woodward High School, Cincinnati, Ohio, 1895; U. S. Military Academy, West Point, N. Y., 1900; Engr. School of Application, 1903; School of the Line, Fort Leavenworth, Kans., 1921; M. A. (Honorary), Ohio Univ., 1914)—1900-1902 building roads and bridges in Philippine Islands: 1903-1904 Asst. to Col. Amos Stickney, Corps of Engrs., U. S. A., in local charge of improvement of East, Harlem, and Bronx Rivers, New York City, and other river and harbor improvements on Long Island, and on north shore of Long Island Sound, in State of New York: 1904-1907 in charge of Honolulu District; built aids to navigation; purchased sites for sea-coast defenses; prepared plans for improvement of Honolulu and Hilo Harbors, and carried out first part of improvement of Honolulu Harbor; in connection with the latter reclaimed valuable land belonging to United States: Mar.-July 1907 on duty in Havana, Cuba, commanding Co. L, 3d Battalion of Engrs.; made survey of Havana Harbor: 1907-1911 Commanding Co. L, 3d Battalion of Engrs., Fort Leavenworth, Kans., and elsewhere; had immediate charge of construction of last half of bridge across the Kaw River at Fort Riley, Kans.; supervised construction of part of terminal railroad layout at Fort Leavenworth; from time to time in charge of maintenance of roads in Fort Leavenworth: 1911-1913 Dist. Engr., Jacksonville, Fla., in charge of improvement of rivers and harbors in State of Florida, except in northwestern part; in charge of maintenance of sea-coast defenses of Key West and entrance to Tampa Bay: 1913-1917 Dist. Engr., Vicksburg, Miss., in charge of levee and bank revetment work in the Third Mississippi River Dist.; during part of this period had charge of lock and dam work on the Ouachita and Big Sun Flower Rivers, and improvement of Red River and its tributaries: 1917-1918 commanding 312th Engrs.: 1918 G-4, Bordeaux, France: Oct. 1918-1919 Chf. Engr., 7th Army Corps: 1919-1920 Dist. Engr., Portland, Ore., in charge of improvement of Columbia River below Vancouver, and tributaries; in charge of maintenance of coast defenses at mouth of Columbia River: 1921-1923 Dist. Engr., Nashville, Tenn., in charge of lock and dam work on Cumberland River, and open channel improvement of Lower Tennessee River: 1923-1925 Dist. Engr., First New York Dist.; Sept., 1923-April 1, 1925 Member of Board of Engrs.: 1925 to date Deputy Chf. Engr., Board of Transportation of the City of New York: Member, Am. Soc. C. E.; Past-Pres., New York Section, Am. Soc. C. E.; Past-Pres., Am. Military Engrs.; Vice-Pres., Municipal Engrs. of the City of New York; Member, Terminal Engrs.; New York County Chapter, State Soc. Professional Engrs. and Land Surveyors; Engineers and University Clubs, New York City, and Army and Navy Club, Washington, D. C.

Charles Henry Stevens

(Official Nominee for Director, District No. 4)

Born October 21, 1875, Harrisburg, Pa. (Public Schools)—1888-1898 served an apprenticeship in Mechanical Engineering: 1898-1900 Draftsman on design of wharves, docks, and shipping facilities for the Reading Co.: 1900-

1903 Draftsman on plans for highway and railway bridges, City of Philadelphia, Pa.: 1903-1907 Draftsman and Squad Boss on design of Market Street Subway and Elevated Ry., Philadelphia: 1907-1912 Asst. Engr., for City of Philadelphia, on design of railway bridges and viaduct, the underpinning of adjacent buildings, re-grading streets, and reconstruction of sewers and other utility structures, appurtenant to the removal of a large number of grade crossings on the line of the Reading Co., in Philadelphia: Jan.-July, 1913 Supt. of High-Pressure Fire Service for City of Philadelphia, on construction of fire service mains: July, 1913 to date, Head Draftsman and Engr. of Design for City of Philadelphia, in charge of design of city-owned system of subway and elevated railways for passenger transportation; also, in private consulting practice: Member, Am. Soc. C. E.; Past-Secy.-Treas. and Past-Pres., Philadelphia Section, Am. Soc. C. E.; Past-Secy. and Past-Pres., Soc. of Municipal Engrs. of Philadelphia; Member, Am. Soc. for Testing Materials; Am. Concrete Inst.; Engineers' Club of Philadelphia; Registered Professional Engr. in State of Pennsylvania.

Franklin Thomas

(Official Nominee for Director, District No. 11)

Born May 19, 1885, Red Oak, Iowa (Univ. of Iowa, B. E., 1908; C. E., 1913)—1908-1909, Student, McGill Univ., Montreal, Que., Canada: 1909-1910 Foreman, Mines Power, Ltd., Cobalt, Ont.: 1910-1912 Instr., Dept. of Eng., Univ. of Michigan: 1912-1913 Designer, Alabama Power Co.: 1913-1915 Associate Prof., and to date, Prof., of Civ. Eng., California Inst. of Technology: 1919 Asst. Engr., U. S. Reclamation Service, on leave of absence from the Institute: 1921-1927 Member and Vice-Chairman, Board of Directors, City of Pasadena, Calif.: 1927-1928 Pres., Pasadena Chamber of Commerce: 1928 to date Member and Vice-Chairman, Board of Directors, Metropolitan Water Dist. of Southern California: Member, Am. Soc. C. E.; Past-Pres., Los Angeles Section, Am. Soc. C. E.; Member, Special Committee on Irrigation Hydraulics, Am. Soc. C. E.; Member, Am. Assoc. of Engrs.; Soc. for Promotion of Eng. Education; Am. Assoc. for the Advancement of Science; University and Athletic Clubs, of Pasadena.

Donald Alexander MacCrea

(Official Nominee for Director, District No. 14)

Born October 6, 1873, Berwick, Pa. (High School and College Preparatory)—1893-1894 Rodman on railroad surveys in Pennsylvania: 1895-1896 Rodman and Instrumentman on Montauk Extension of Long Island R. R.: 1896-1898 Topographer on railroad surveys for Erie R. R., and other roads in Pennsylvania: 1898-1901, Res. Engr. on construction for Choctaw, Oklahoma & Gulf Ry., in Oklahoma and Arkansas: 1901-1903 Div. Engr. in charge of construction of Geary Extension and Guthrie Extension, C. O. & G. Ry., in Oklahoma: 1903-1905 Div. and Locating Engr. on construction of Midland Val. Ry., in Oklahoma and Arkansas: 1905-1908 Engr. in charge of construction of

extensions, Haskells to El Dorado and Crossett, Ark., of Chic., R. I. & Pac. Ry., and Engr. in charge of construction of the Irving and Carrollton Extension of the Chic., R. I. & Gulf Ry., in Texas: 1909 to date member of firm of Ford and McCrea, Cons. Engrs., Little Rock, Ark.; planned and supervised construction of many public improvements and personally acted as Chief Engineer of various large public improvement projects, embracing several hundred miles of high type surface roads, city paving, and storm and sanitary sewer improvements: June, 1927, to date, Cons. Engr. to the Arkansas State Highway Comm., during construction of a \$67 000 000 State road program.

Allan Theodore Dusenbury

(Official Nominee for Director, District No. 15)

Born January 8, 1878, Homer, Calhoun County, Mich. (Common and High School, Mt. Pleasant, Mich.; Univ. of Michigan, B. S. M. E., 1904)—1895-1900 with Exchange Savings Bank, Mt. Pleasant, Mich.: 1904-1907 Designing and Testing Engr., Advance Pump & Compressor Co., Battle Creek, Mich.: 1908-1919 Vice-Pres. and Chf. Engr., Louisiana Meadows Co., New Orleans, La., extensively engaged in the reclamation and development of wet and overflowed lands in the Delta of the Mississippi River: 1920 to date, private consulting practice, specializing largely in drainage and reclamation projects and general land development: Past-Pres., Louisiana Eng. Soc.; Member Am. Soc. C. E.; Past-Pres., Louisiana Section, Am. Soc. C. E.

Local Sections*

Arizona.—June 14, 1929. The Summer Meeting of the Section was held under the north abutment of Grand Canyon Bridge on the rim of Marble Gorge of the Colorado River, 125 miles north of Flagstaff, Ariz. This meeting was devoted entirely to the Grand Canyon Bridge and was held in conjunction with the dedication program, in which nearly 5 000 people participated. Maj. L. D. Blauvelt, State Highway Engineer at Denver Colo., and several other prominent engineers were guests of the Section. Papers were read by L. C. Lashmet, Designing Engineer, on the "Design of Grand Canyon Bridge," and by R. A. Hoffman, Bridge Engineer, on the "Construction of the Grand Canyon Bridge." W. W. Lane, State Highway Engineer, discussed the economic value of the project and future plans of the Highway Department in developing the U. S. Highway No. 89 which crosses Grand Canyon Bridge, after which, C. E. Perkins, District Construction Engineer of the Arizona Highway Department, gave an interesting account of the contractor's problems while engaged in the building of the bridge. The remainder of the meeting was devoted to open discussions and inspection of the bridge. Attendance 12.

Central Illinois.—October 18, 1929. A Joint Dinner Meeting of the Section with the Engineers' Club of Springfield, was held at the St. Nicholas Hotel in Springfield, Ill. Mr. Frank Sheets, who has just returned from an interesting trip to South America, was the speaker of the evening on the subject of "Engineering, Economic and Social Observation in South America." Attendance 80.

Cincinnati.—October 21, 1929. This meeting of the Section was held at the Engineers' Club, at which Mr. O. T. Grimm, of the U. S. District Engineer's Office, presented an illustrated lecture on "The Ohio River—Its Improvement and Commerce". Mr. Grimm explained that Ohio River traffic has doubled in the past ten years, and it is reasonable to believe that with the completed improvement, the next decade will bring an even greater proportional increase. With this development in traffic the economic saving represented by reduced cost of shipments is equivalent to the interest on the investment and cost of operation of the dams. Attendance 23.

Colorado.—October 2, 1929. A dinner meeting of the Section was held at the Athletic Club in Denver. H. W. Dennis, Director from District No. 11, spoke briefly concerning various questions which have come before the Society, after which Dr. Elwood Mead, Commissioner of Reclamation, presented some of the problems relating to the division of waters of the Rio Grande and other Southwestern rivers which would come before the International Commission representing the United States and Mexico. The main event of the meeting was the consideration of the report of the Special Committee of the Society on "Charges and Method of Making Charges for Professional Services". Mr. H. S. Crocker led the discussion of this report, followed by Messrs. Shankland, Field, Eckles, Carstarphen, Gilkey, Waters, Curtis, McCullough, Tipton, and Childs. Mr. Dennis concluded the discussion. Attendance 40.

* For list of Local Section Officers, Rules, etc., see 1929 Year Book, p. 46.

Dayton.—October 14, 1929. Luncheon was served at the Fairmount Park Clubhouse, after which the group in attendance, conducted by Messrs. W. W. Morehouse and Tatlock, was taken on an inspection trip to the recently completed municipal sewage disposal plant. This plant which is not yet in operation, afforded an interesting spectacle to members of the Section and their guests. Attendance 45.

Detroit.—October 22, 1929. At this meeting of the Section the following officers were elected for 1929-30: President, J. H. Wasson; First Vice-President, A. H. Place; Second Vice-President, W. C. Hoad; and Secretary-Treasurer, F. E. Weber.

Georgia.—October 7, 1929. A regular meeting of the Section was held at the Atlanta Athletic Club. Various business matters of local and Society importance were attended to, after which Mr. R. W. Torras gave an interesting talk on the possibilities of City Planning under the new Greater Atlanta Act. Attendance 15.

October 25, 1929. A special meeting of the Section was held at the Atlanta Athletic Club in honor of Dean Anson Marston, President of the Society. It was the occasion of an informal luncheon, at which J. Houstoun Johnston, Director of the District, and Dean Marston spoke on Society activities. In the evening a dinner dance and bridge party were held at the Druid Hills Golf Club for Dean Marston. After dinner the guests were entertained by Mr. and Mrs. C. E. Drummond, Jr., accompanied by Miss Irene Leftwich. This was followed by an address by Frank H. Neely, Chairman of the Atlanta Bond Commission, who urged engineers to dedicate their work and influence to higher civic usefulness; Dean Marston also addressed the meeting, detailing the character of the engineer and the romance of engineering. The attendance at the afternoon meeting was 49, and in the evening, 51.

Los Angeles.—October 9, 1929. At a regular meeting of the Section, held at the Engineers' Club, the major part of the program consisted of an Industrial Symposium. Short talks were given with reference to recent developments in design of pumping equipment, manufacture and use of clay products, modern developments in concrete pipe manufacture, and the automobile and airplane industry in Southern California.

Portland (Ore.).—October 16, 1929. The Fall Meeting of the Section was held at the University Club, the main item of business being the election of Mr. C. C. Hockley as President for 1930. Subsequent to this, a paper on "Minimum Professional Fees" was presented by Professor Walter Haines, of the Oregon School of Technology. A discussion and an illustrated lecture on the construction of the Cascade Tunnel, by Natt McDougall, Vice-President of the A. Guthrie Company, General Contractors for this work, concluded the meeting.

St. Louis.—October 28, 1929. A regular meeting of the Section was held at the Mayfair Hotel. Matters of a business nature were presented after which the meeting was adjourned. Attendance 29.

Texas.—October 17, 18, 19, 1929. This was the Annual Meeting or State Convention held at Corpus Christi, Tex., and attended by engineers from all sections of the State. At the opening session, the Hon. Roy Miller addressed the meeting on "The Development of Waterways", and Mr. Robert J. Cummins spoke on "The Development of the Port of Corpus Christi." "The Brazos River Project" was the subject Mr. Ireland Hampton and Maj. John B. Hawley chose for their topic for the afternoon meeting, with Capt. Arthur W. Parker, U. S. A., Constructing Quartermaster, speaking on "Construction Features of Randolph Field, the West Point of the Air." An inspection of the Corpus Christi port facilities and the Aransas Compress Plant, together with a drive around the city, to which the ladies were invited, concluded the afternoon. A dinner was held at the Nueces Hotel in the evening. The following day the program was devoted to addresses by Dean T. U. Taylor entitled "The Desilting of Reservoirs"; by Mr. W. O. Washington, on "Strength Design of Concrete Pavements"; and by Professor John A. Focht on the "Correlation of Strength Cylinders and Cores from Concrete Roads." A boat trip through Corpus Christi Channel to the Gulf of Mexico at Aransas Pass, with the ladies accompanying the party, proved an enjoyable conclusion to the afternoon. At the evening meeting, Mr. P. A. Welty spoke on "The Subdivision of Irrigated Lands as Controlled by Topography", and Mr. E. L. Myers described the "Starr County Project". A business session followed, at which various matters of importance were transacted, including an address by Mr. O. H. Koch on the "Workings of American Engineering Council", and the election of the following officers for 1930: President, J. E. Pirie; First Vice-President, O. H. Koch; Second Vice-President, T. E. Huffman; Directors, Terrell Bartlett and W. J. Powell; and Secretary-Treasurer, J. T. L. McNew. The approximate attendance at the meetings was 70.

Student Chapters*

Princeton University.—Following a business meeting of the Chapter, Mr. Robert M. Schafer gave a brief illustrated description of his travels through Switzerland during the past summer, emphasizing in particular the fortifications of the Swiss Federal Railways along the southern frontier. Four reels of motion pictures on riveting and welding were then shown.

* For list of Student Chapters, Officers, etc., see 1929 Year Book, p. 52.

Engineering Societies Library

The services of the Engineering Societies Library are available to all members who wish searches, copies, translations, etc., or advice on technical literature. A collection of modern books is also available for loan to members in North America, at moderate rentals. Correspondence should be addressed to the Director, Engineering Societies Library, 29 West 39th Street, New York, N. Y., who will gladly give information concerning the charges for the various kinds of work. A more comprehensive statement in regard to this matter will be found on pages 73 and 74 of the Year Book for 1929.

Book Notices*

(October 1 to October 31, 1929)

Engineering Mechanics. By William Brooke and Hugh B. Wilcox. (Engineering Series.) Bost., Ginn & Co., 1929. 320 pp., 9 x 6 in., cloth. \$3.20.

This concise course in fundamental principles, intended for students with some knowledge of the calculus, covers statics, kinematics, and dynamics. Many problems are provided.

Introduction to the Study of Landscape Design. By Henry Vincent Hubbard and Theodora Kimball. Rev. Edition. N. Y., Macmillan Co., 1929. 419 pp., illus., plans, 10 x 7 in., cloth. \$6.00.

This general conception of landscape design will "enable the designer better to determine for himself the relations of the objects and ideas with which he is dealing, and better to prepare and use in a decisive way the natural aptitudes and acquired knowledge which are the tools of his trade."

Manuel Pratique de Soudure Autogéne. By R. Granjon and P. Rosemberg. Second Edition. Paris, Dunod, 1929. 410 pp., illus., 9 x 6 in., paper. 33,70 fr.

This handbook of welding practice has been popular in France and in an English translation. Apparatus for autogenous welding, methods, and their application to steel, iron, copper, brass, lead, aluminum, etc., are described in detail.

Petroleum Register, 1929. N. Y., Chilton Class Journal Co., 1929. 396 pp., maps, 12 x 9 in., cloth. \$10.00.

This gives a directory of producers, refiners, etc., with information concerning their officers, properties, capitalization, and products.

Popular Research Narratives, Vol. 3. Collected by Engineering Foundation. Balt., Williams & Wilkins Co., 1929. 174 pp., ports., 8 x 5 in., cloth. \$1.00.

In this volume are given fifty brief stories of what scientific research has accomplished, or is accomplishing, covering a wide variety of topics. Each story teller is intimately associated with the work he describes, and tells his story simply and interestingly.

Pumpen und Druckwasseranlagen. By Rudolf Vogdt. Berlin u. Lpz., Walter de Gruyter & Co., 1929. 155 pp., illus., diagrams, tab., 6 x 4 in., cloth. 1,50 r.m.

This concise text on pumps and pumping machinery describes the various types and gives data on capacities, uses, etc.

Wärmewirtschaft im Eisenbahnwesen. By Fr. Landsberg. (Wärmelehre und Wärmewirtschaft, v. 7.) Dresden u. Lpz., Theodor Steinkopff, 1929. 207 pp., illus., diagrams, tab., 9 x 6 in., paper. 13 r.m.

This application of the general principles of fuel economy to the specific problems of railroad operation, covers all the various uses of fuel in train operation, in shops, and in stations.

* The statements made in these notices are taken from the books themselves, and this Society is not responsible for them. Unless otherwise specified, the books in this list have been donated by the publishers.

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Current Civil Engineering Literature

Key to Abbreviated References to Publications Indexed*

Abbreviated References.	Publication.	Place.
Am. C. Inst.	American Concrete Institute, Proceedings (Y.)	Detroit
A. I. E. E.	American Institute of Electrical Engineers Journal (M.)	New York
A. R. E. A.	American Railway Engineering Association, Proceedings (Y.)	
A. S. T. M.	American Society for Testing Materials, Proceedings (Y.)	Chicago
Am. Soc. C. E.	American Society of Civil Engineers, Proceedings (M.)	Philadelphia
Am. Soc. Mun. Impvts.	American Society for Municipal Improvements, Proceedings (Y.)	New York
Am. W. W. Assoc.	American Water Works Association, Journal (M.)	New York
Am. Wood Prs. Assoc.	American Wood Preservers Association, Proceedings (Y.)	Baltimore
Ann. P. et C.	Annales des Ponts et Chaussées (Bi-M.)	Chicago
Ann. T. P. Belg.	Annales des Travaux Publics de Belgique (Bi-M.)	Paris
Assoc. Ing. Gand.	Annales de l'Association des Ingénieurs sortis des Ecoles Spéciales de Gand (Q.)	
Bost. Soc. C. E.	Boston Society of Civil Engineers, Journal (M.)	Ghent
Can. Engr.	Canadian Engineer (W.)	Boston
City Plan.	American City Planning Institute (Q.)	Toronto
Comwlth. Engr.	Commonwealth Engineer (M.)	Boston
Conc.	Concrete (M.)	Melbourne
Cornell C. E.	Cornell Civil Engineer (M.)	Chicago
Dock & Harbour	Dock and Harbour Authority (M.)	Ithaca
Eng.	Engineering (W.)	London
Eng. & Contr.	Engineering and Contracting (M.)	London
Eng. Inst. Can.	Engineering Institute of Canada, Journal (M.)	Chicago
Eng. N. R.	Engineering News-Record (W.)	Montreal
Engr. Soc. W. Pa.	Engineers' Society of Western Pennsylvania, Journal (M.)	New York
Engr.	Engineer (W.)	Pittsburgh
Engrs. & Eng.	Engineers and Engineering, Engineers' Club of Philadelphia (M.)	London
Gas und Wasser.	Gas und Wasserfach	Philadelphia
Gen. Civ.	Le Génie Civil (W.)	Munich
Gesund. Ing.	Gesundheits Ingénieur (W.)	Paris
Hydraulic Eng.	Hydraulic Engineering (M.)	Munich
Inst. C. E.	Institution of Civil Engineers Minutes of Proceedings (Q.)	Los Angeles
Inst. Mun. & Co. Engrs.	Institution of Municipal and County Engineers, Journal (W.)	London
Int. Ry. Cong. Assoc.	International Railway Congress Association, Bulletin (M.)	London
Land. Arch.	Landscape Architecture (Q.)	Brussels
Mech. Eng.	Mechanical Engineering (M.), Journal of the American Society of Mechanical Engineers	Boston
Mil. Engr.	Military Engineer (Bi-M.)	New York
Min. & Metal.	Mining and Metallurgy (M.), American Institute of Mining Engineers	Washington
N. E. W. W. Assoc.	New England Water Works Association, Journal (Q.)	New York
N. Y. R. R. Club.	New York Railroad Club, Proceedings (M.)	Boston
Oest. Ing. Arch. Ver.	Oesterreichischer Ingenieur und Architekten Verein, Zeitschrift (F.)	Brooklyn
Power	Power (W.)	Vienna
Public W.	Public Works (M.)	New York
Rev. Gen.	Revue Générale des Chemins de Fer (M.)	New York
Ry. Age.	Railway Age (W.)	Paris
Ry. Eng. & Maint.	Railway Engineering and Maintenance (M.)	New York
R. & S.	Roads and Streets (M.)	Chicago
Schw. Bauz.	Schweizerische Bauzeitung (W.)	Chicago
Scl. Am.	Scientific American (M.)	Zurich
Soc. Ing. Civ. Fr.	Société des Ingénieurs Civils de France, Mémoires et Comptes Rendus (Q.)	New York
Tech. Gemein.	Technisches Gemeindeblatt (F.)	Paris
Ver. deu. Ing.	Verein deutscher Ingenieure, Zeitschrift (W.)	Berlin
W. W. & Sewer.	Waterworks and Sewerage (M.)	Berlin
West. Constr. N.	Western Construction News (F.)	Chicago
West. Ry. Club.	Western Railway Club, Proceedings (M.)	San Francisco
West. Soc. Engrs.	Western Society of Engineers, Journal (M.)	Chicago
Zeit. Bau.	Zeitschrift für Bauwesen (Q.)	Chicago
Z. d. Bauver.	Zentralblatt der Bauverwaltung (W.)	Berlin

* Y = Yearly; Q = Quarterly; M = Monthly; F = Fortnightly; W = Weekly.

B. Applied Mechanics

a. Mechanics of Solids

1. **Processes of Measurement and Methods of Testing**
Experimental Research on Vibration Dampers and Insulators.* Stephen E. Slocum. Am. Soc. C. E. Oct., '29.

Tests of Frame Wall Construction.* George W. Trayer. Eng. N. R. Oct. 24, '29.

2. Elastic Solids

Contribution à l'Etude des Pièces Chargées de Bout.* (Contribution to the Study of Pieces Loaded at the End.) L. Descans. Assoc. Ing. Gand. Pt. 2, '29.

6. Heterogenous Solids (Reinforced Materials)

Note au Sujet de Quelques Particularités du Béton Armé.* (Note on the Subject of Some Characteristics of Reinforced Concrete.) Lamorre. Ann. P. et C. May, '29.

b. Hydraulics

2. Physical Hydraulics

Providing for a 2 418-Ft. Head in the Big Creek 2-A Penstock.* H. L. Doollittle. Eng. N. R. Sept. 26, '29.

3. Industrial Hydraulics

Ruskin Hydroelectric Project.* D. D. Carpenter. West. Constr. N. Sept. 10, '29.

Saku Hydro Plant, Designed Earthquake Proof.* K. Tsuruta. Power Sept. 24, '29.

Die Strömung im Spalttraum der Wasserturbinen.* (Flow in the Clearance of Hydraulic Turbines.) H. Baudisch. Oest. Ing. Arch. Ver. Sept. 13, '29.

4. Dams

Building Code for Dams. Fred A. Noetzli. West. Constr. N. Sept. 10, '29.

C. Materials of Construction and General Process

a. Lime, Cement, Mortar, Concrete, Brick, Bitumin, Timber, etc.

Making Concrete at Stony Gorge Storage Dam.* Homer J. Gault. (Paper read before Denver Conference Reclamation Officers and Col. Sec. Am. Soc. C. E.) Eng. & Contr. Sept., '29.

b. Metals

Inspecting Structural Steel.* W. E. Emmett. West. Constr. N. Sept. 10, '29.

Lighter Structures.* Robert L. Streeter. Eng. N. R. Sept. 26, '29.

Les Propriétés des Câbles Métalliques.* (The Properties of Metallic Cables.) Gen. Civ. Sept. 7, '29.

c. Preservation and Use of Materials, Painting, Waterproofing

Materials Used for Fireproofing Structural Steel. J. Singleton. Can. Engr. Oct. 8, '29.

e. Earthwork, Cubage, Excavating Machinery

Detailed Cost Records and Time Studies on Earth Moving Job.* J. H. McQuaide. Eng. & Contr. Sept., '29.

f. Rock Excavation, Mining, Rock Removal

Abstracts of Institute Publications. Min. & Metal. Sept., '29.

Die Grubenlokomotivbahnen in der Nachkriegszeit.* (Mine Locomotive Work Progress in the Post-War Period.) Spackeler. Ver. deu. Ing. Sept. 21, '29.

g. Execution of Works, Specifications

Rapid Warehouse Construction by Standard Methods.* John F. Miller. Eng. N. R. Sept. 26, '29.

2. Of Concrete

Construction Plant and Methods for Concrete Buildings. (Abstract of Comm. Report read before Constr. Div.) Am. Soc. C. E. Oct., '29.

Exceptionally Dry Concrete Used on Two Large Dams.* Eng. N. R. Oct. 24, '29.

4. Of Metal

Low-Expansion Nickel Steel.* Eng. Sept. 27, '29.

Construction Plant and Methods for Steel Frame Buildings.* (Abstract of Comm. Report read before Constr. Div.) Am. Soc. C. E. Oct., '29.

5. Of Reinforced Concrete

New Underground Conveniences: Metropolitan Borough of Lambeth.* Osmond Cattlin. Inst. Mun. & Co. Engrs. Oct. 1, '29.

j. Piles and Pile-Driving

Precast Concrete Piles and Special Equipment for Their Handling and Placing.* Maxwell M. Upson. Engrs. Soc. W. Pa. June, '29.

k. Tunnels and Tunneling-Shields

Missouri River and Turkey Creek Pressure Tunnels. Charles S. Foreman. Am. W. W. Assoc. Sept., '29.

Novel Construction Size, Distinguish George A. Posey Tube.* Eng. & Contr. Sept., '29.

Concrete Placing Methods Used in Building Tubes for Detroit and Canada Tunnel.* Conc. Sept., '29.

Progress of the Detroit-Canada Tunnel.* Can. Engr. Oct. 8, '29.

The Detroit-Canada Vehicular Tunnel.* Eng. N. R. Oct. 17, '29.

Unusual Methods Used in Repair of Roof Girders in Street Underpass.* H. T. Welty. Eng. N. R. Oct. 24, '29.
Le Nouveau Tunnel pour Traffic Routier sous la Mersey.* (The New Vehicular Tunnel under the Mersey.) J. Blockmans. Ann. T. P. Belg. Aug., '29.

D. Highways

c. Construction

Typical Road Sections for Various Rights of Way.* Fred Grumm. (From *California Highways and Public Works*.) R. & S. Sept., '29.
Bituminous Macadam Construction in Connecticut. W. M. Creamer. (Paper read before State Highway Inspectors.) R. & S. Sept., '29.
Some Notes on Highway Construction in France, Germany and England.* C. L. McKesson. (Paper read before West. Assoc. State Highway Officials.) R. & S. Sept., '29.
Oiled Gravel Roads in Wyoming.* C. H. Bowman. (Paper read before Univ. of Col.) R. & S. Sept., '29.
Construction and Maintenance of Gravel Roads. R. W. McCollough. (Paper read before Can. Good Roads Assoc.) R. & S. Sept., '29.
Country Road Improvements. F. D. Ogden. Inst. Mun. & Co. Engrs., Sept. 3, '29.
Repaving Santa Clara and Buena Vista Avenues, Alameda, California.* West. Constr. N. Sept. 25, '29.
Super-Highway Development in the Milwaukee Metropolitan Area. Joseph A. Stransky. Discussion: M. W. Torkelson. Am. Soc. C. E. Oct., '29.
Construction Plant and Methods for Concrete Roads. (Abstract of Comm. Report read before Constr. Div.) Am. Soc. C. E. Oct., '29.
Why Joints in Concrete Pavements. Clifford Olden. Eng. N. R. Oct. 3, '29.
Reinforcing for Concrete Pavements. B. C. Brody. Can. Engr. Oct. 8, '29.
Engineering in Mecklenburg County, North Carolina.* Eng. N. R. Oct. 10, '29.
Dummy Joints Prevent Cracks in Seattle Concrete Pavements.* H. F. Faulkner. Eng. N. R. Oct. 17, '29.
Résultats Généraux d'une Etude Micrographique sur les Revêtements des Chaussées Silicatées.* (General Results of a Micrographic Study of Silicated Pavements.) Paul Jodot. Ann. P. et C. May, '29.
Nature et Qualités des Matériaux entrant dans la Construction des Revêtements Silicatées.* (Nature and Qualities of Materials used in the Construction of Silicated Pavements.) P. Deslandres. Ann. P. et C. May, '29.
Note sur le Silicate de Soude et son Application à la Confection des Chaussées.* (Note on Sodium Silicate and Its Use in Road Building.) P. le Gavrian. Ann. P. et C. May, '29.
Betonmischungen für Strassenbau.* (Concrete Mixtures for Pavements.) Z. d. Bauver. Sept. 25, '29.

d. Maintenance

Township Road Management in Ontario. J. H. Hawes. (Paper read before Conference on Road Constr., County & Township Road Supts.) R. & S. Sept., '29.

g. Machinery and Tools

Heavy Highway Grading Equipment on the Newhall Alternate, California.* R. G. LeTourneau. West. Constr. N. Sept. 10, '29.
Output Factors for Machine Excavators.* A. E. Holcomb. (Paper read before Joint Meeting Constr. & Waterways Div.) Am. Soc. C. E. Oct., '29.
Belt Conveyors Remove Denny Hill, Seattle.* Eng. N. R. Oct. 3, '29.

h. Vehicles, Automobiles, Traffic

Street Traffic Control. C. E. DeLeuw. West. Soc. Engrs. Sept. '29.
Equitable Distribution for Highway Purposes of Motor Vehicle License Fees and Gasoline Taxes. Discussion: Henry R. Trumbower. (Paper read before Highway Div.) Am. Soc. C. E. Oct., '29.
Traffic Control Plan for the Central Districts of San Francisco.* George D. Burr. West. Constr. N. Oct. 10, '29.
Kreuzung und Gabelung von Hauptverkehrsstrassen.* (Crossing and Forks in Main Traffic Streets.) Kuckuck. Z. d. Bauver. Sept. 4, '29.

E. Bridges, Viaducts and Arches

b. Iron and Steel Bridges and Viaducts

Problems Overcome in Building Approach to St. Louis Municipal Bridge.* M. H. Doyne. Eng. N. R. Oct. 24, '29.
Le Pont-Route Métallique, Soudé à l'Arc Electrique de Lowicz (Pologne).* (The Lowicz, Poland, Arc Welded Metallic Highway Bridge.) Stefan Bryla. Gen. Civ. Sept. 14, '29.
Die Hafenbrücke von Sydney.* (Sydney Harbor Bridge.) Eger. Z. d. Bauver. Sept. 11, '29.

d. Concrete and Reinforced Concrete Bridges and Viaducts

Reinforced-Concrete Arch of 254-Ft. Span Designed with Temporary Hinges.* Merrill Butler. Eng. & Contr. Sept., '29.
Construction Plant and Methods for Concrete Bridges.* (Abstract of Comm. Report read before Constr. Div.) Am. Soc. C. E. Oct., '29.
Unusual Retaining Wall Proves Success on the P. & L. E.* Ry. Age Oct. 5, '29.
Die Beton-Bogenbrücke von La Caille.* (The La Caille Concrete Arch Bridge.) Eger. Z. d. Bauver. Sept. 25, '29.

f. Suspension Bridges, Transfer Bridges
 Plate Chains a Feature of Tokyo Suspension Bridge.* Eng. N. R. Oct. 3, '29.
 Dismantling Two Long Suspension Bridges.* Eng. N. R. Oct. 10, '29.
 New York Plans Vehicular Bridge Across East River at Hell Gate. Eng. N. R. Oct. 17, '29.

g. Swing, Bascule, Lift, Floating, Oscillating Bridges, Traveling Cranes
 Concrete Road Plants. Public W. Sept., '29.
 Neue Klappbrücken in Amsterdam.* (New Lift Bridges in Amsterdam.) Jr. C. Biemond.
 Ver. deu. Ing. Sept. 21, '29.

F. Inland Waters and Waterways

a. Natural Waterways (General Articles)

Engineering Features of the Illinois Waterway.* Walter M. Smith. Discussion: William Kelly. (Paper read before Waterways Div.) Am. Soc. C. E. Oct., '29.
 Construction Methods on the Ohio and Missouri Rivers.* F. E. Lamphere. (Paper read before Joint Meeting of Constr. & Waterways Div.) Am. Soc. C. E. Oct., '29.
 La Voie Navigable Maestricht-Rotterdam. (The Maestricht-Rotterdam Waterway.) H. Santillan and E. de Meyer. Ann. T. P. Belg. Aug., '29.

b. Canals (General Articles)

Engineering Features of the Welland Ship Canal.* Frank E. Sterns. (Paper read before Waterways Div.) Am. Soc. C. E. Oct., '29.
 Construction Methods of the Welland Ship Canal.* E. G. Cameron. (Paper read before Joint Meeting of Constr. & Waterways Div.) Am. Soc. C. E. Oct., '29.

c. Regulation of Waterways—Volume of Discharge, Freshets, Floods, Soundings

Detroit Flood Hazards from Periodic Lake Rises.* Louis E. Ayres. Eng. N. R. Sept. 19, '29.
 Atchafalaya Floodway for Mississippi Flood Control.* W. W. DeBerard. Eng. N. R. Sept. 26, '29.
 Engineer District Organization for Mississippi Flood Protection.* W. W. DeBerard. Eng. N. R. Oct. 10, '29.
 Stabilization Methods Used on the Indus Recommended for the Mississippi.* P. Claxton. Eng. N. R. Oct. 17, '29.
 Zur Frage einer allgemeinen Abflussformel.* (On the Question of a General Drainage Formula.) G. Trossbach. Z. d. Bauver. Sept. 11, '29.

d. Diverting Dams, Locks, Lifts, Elevators, Inclined Planes

Die Grundwasserabsenkung beim Bau der Schleuse Flaesheim des Schiffahrtskanals Wesel-Datteln.* (The Lowering of the Ground Water Level During the Construction of the Flaesheim Lock of the Wesel-Datteln Ship Canal.) Witte. Z. d. Bauver. Sept. 18, '29.

g. Consolidation of Banks, Leakage, Maintenance of Channel, Dredging

Lake Front Improvements of Chicago, Illinois: Construction Plant and Methods. J. E. Cahill. (Paper read before Joint Meeting of Constr. & Waterways Div.) Am. Soc. C. E. Oct., '29.

j. River and Lake Ports, Equipment

Importance of River Terminals and Docking Facilities in the Development of River Transportation. E. K. Morse. Engrs. Soc. W. Pa. June, '29.

k. Utilization of Inland Waterways, Freight, Capacity

Waterway Transportation from the Viewpoint of Operation.* Thomas Q. Ashburn. Am. Soc. C. E. Oct., '29.

G. Maritime Works

c. Vessels and Maritime Navigation, Lighthouses, Buoys, Various Signals

Atlantic Liners.* E. De Vito. (Paper read before Inst. Naval Archts.) Engr. Sept. 20, '29.
 Le Paquebot à Propulsion Electrique "Viceroy of India" de la Peninsular and Oriental Steam Navigation Co.* (The Electrically Driven Boat "Viceroy of India" of the Peninsular and Oriental Steam Navigation Co.) P. Calfas. Gen. Civ. Sept. 7, '29.

f. Maritime Rivers and Canals, Bank Protection

Ausführung einer tiefgegründeten Ufermauer mittels Betonfangdamm.* (Construction of a Sea-Wall with a Deep Foundation, by Means of a Concrete Cofferdam.) Schw. Bauz. Sept. 21, '29.

h. Wharves, Mooring Buoys, Harbor Equipment

New Coal Storage Dock at Hamilton.* K. J. Burnett. Can. Engr. Sept. 17, '29.
 Tilbury Docks Improvement Works.* Engr. Sept. 27, '29; Eng. Sept. 27, '29.

i. Harbors (General Articles)

Further Developments at the Port of Mombasa.* George Bulkeley. Dock & Harbour Sept., '29.
 The Harbour of Saint John, New Brunswick.* Dock & Harbour Sept., '29.
 Les Travaux d'Extension du Port de Flessingue.* (The Work on the Extension of the Port of Flessingue.) A. Bijls. Gen. Civ. Sept. 7, '29.

H. Railroads. Street and Interurban Railways. Automobiles. Aeronautics**a. Railroads****1. General Articles.**

The Peipiao Extension of the Chao Yang Branch of the Peking-Mukden Railway.* H. Stringer. Eng. Serial beginning Sept. 27, '29.

Grand Trunk Relocates Its Line Through South Bend, Ind.* Eng. N. R. Oct. 3, '29.

Der Ausbau des türkischen Eisenbahnnetzes.* (The Extension of the Turkish Railway System.) Fritz Illner. Oest. Ing. Arch. Ver. Sept. 27, '29.

4. Aerodromes and Landing Fields

Roads Report Tie Records of Rocky Mountain Timbers.* R. M. Wirka. Ry. Eng. & Main. Sept., '29.

Concrete Trestle No Bar to Raising Track.* Ry. Eng. & Main. Sept., '29.

5. Signals and Safety Apparatus

Boston & Maine Uses Reverse-Traffic Signaling in Hoosac Tunnel.* E. N. Fox. Ry. Age Sept. 28, '29.

The D. & R. G. W. Expedites Trains by Centralized Control.* Ry. Age Oct. 12, '29.

Installations Récentes de Block-Automatique par Circuits de Voie de la Compagnie du Chemin de Fer Métropolitain de Paris.* (Recent Installations of Automatic Block Signals by Track Circuits, by the Metropolitan Paris Railroad Co.) Joly. Rev. Gen. Aug., '29.

La Signalisation des Passages à Niveau.* (Grade Crossing Signals.) Gerard F. Wittgenstein. Schw. Bauz. Sept. 28, '29.

6. Rolling Stock (Locomotives, Cars) Fuel

Taking Care of 700 Trains a Day.* Ry. Age Sept. 21, '29.

Some Factors in the Freight-Car Draft-Gear Problem. Louis E. Endsley. (Abstract of paper read before Ry. Club of Pittsburgh.) Ry. Age Oct. 19, '29.

Les Locomotives Articulées Actuelles.* (Modern Articulated Locomotives.) Lionel Wiener. Rev. Gen. Aug., '29.

Le Développement des Services Internationaux de Wagons-Lits depuis la Guerre. (The Development of International Sleeping-Car Service Since the War.) Charles Loiseau. Rev. Gen. Sept., '29.

Unification du Matériel Roulant de Petite Vitesse des Grands Réseaux Français.* (Standardization of Slow-Speed Rolling Stock on the Large French Lines.) Vallancien. Rev. Gen. Sept., '29.

Gleichstrom-Schnellzugslokomotiven von 5 400 PS der Bahn Paris-Lyon-Méditerranée.* (5 400 HP Direct Current Express Locomotives for the Paris-Lyon-Mediterranean Railroad.) A. Herger. Schw. Bauz. Sept. 28, '29.

7. Uses of Electricity

D.-C. Railway Substation for the Chicago Terminal Electrification, Illinois Central Railroad.* A. M. Garrett. A. I. E. E. Sept., '29.

8. Stations, Terminals, Engine Houses, Shops

Building Concrete Slabs from Below.* Frank R. Judd. Ry. Eng. & Main. Sept., '29.

The Automobile Goes to Work for the Great Northern.* Ry. Age Serial beginning Oct. 5, '29.

Altoona Terminal Efficiently Operated.* Ry. Age Oct. 12, '29.

Note au Sujet des Travaux d'Aggrandissement de la Gare de Paris-Austerlitz.* (Note on the Subject of the Enlargement of the Paris-Austerlitz Station.) Blondel. Rev. Gen. Sept., '29.

Les Nouveaux Ponts-Routes aux Abords de la Gare de l'Est à Paris.* (New Highway Bridges at the Approaches to the East Station in Paris.) Adrien Taponnier. Schw. Bauz. Sept. 28, '29.

9. Technical and Commercial Use

What Does Truck Operation Cost.* Ry. Age (Motor transport Sec.) Sept. 28, '29.

Railways Extend Motor Coach and Truck Service.* Ry. Age (Motor Transport Sec.) Sept. 28, '29.

Maintaining the Greyhound Lines' Motor Coaches.* W. A. Duvall. Ry. Age (Motor Transport Sec.) Sept. 28, '29.

Relation Between Rail and Waterway Transportation in the United States. E. A. Hadley. Am. Soc. C. E. Oct., '29.

f. Aeronautics**1. General Articles**

American Passenger Air Transport.* Alexander Klemm. Sci. Am. Oct., '29.

What is the Future of Aviation? Reginald M. Cleveland. Sci. Am. Oct., '29.

2. Dirigible Balloons

Kraftgasverwendung im Luftschiff "Graf Zeppelin."* (The Use of Power Gas in the Airship "Graf Zeppelin.") Fritz Sturm. Ver. deu. Ing. Sept. 14, '29.

Über Fesselballone und kleine Lenkballone.* (On Captive Balloons and Small Dirigibles.) W. Kamm. Ver. deu. Ing. Sept. 21, '29.

3. Aeroplanes

How the Autogiro Flies.* Earl D. Osborn. Sci. Am. Oct., '29.

4. Aerodromes and Landing Fields

How Shall We Design Our Airports? William E. Arthur. Sci. Am. Oct., '29.

Elements of Airport Requirements.* John W. Howard. West. Constr. N. Oct. 10, '29.

Land- und See-Flughafen Lübeck-Travemünde.* (Lübeck-Travemünde Airport for Airplanes and Seaplanes.) Neufeldt. Z. d. Bauver. Sept. 4, '29.

I. Municipal Water-Works. Agricultural Engineering. Irrigation**a. General Articles**

Increased Water Supply Creates Industrial Boom at Aberdeen, Wash.* Hydraulic Eng. Sept., '29.

Improving Water Works System of Scotia, New York.* Henry W. Taylor. Public W. Sept., '29.

The Present and Future of the Erie Water Department. J. S. Dunwoody. Am. W. W. Assoc. Sept., '29.

Report of the Committee of the Irrigation Division on "A National Reclamation Policy."* Discussion: Charles R. Hedke, Charles Kirby Fox, Rhodes E. Rule, and George M. Bacon. Am. Soc. C. E. Oct., '29.

Notes on German Water-Works from a Far-Eastern Viewpoint.* H. Stringer. Eng. N. R. Oct. 10, '29.

Wasserversorgung in Uebersee.* (Water Supply in Uebersee.) H. Keller. Gesund. Ing. Sept. 14, '29.

b. Hydrology, Water Resources

Water Resources Activities in North Carolina.* Charles E. Ray, Jr. Am. W. W. Assoc. Sept., '29.

Underground Water Resources in the Vicinity of Tacoma.* Homer O. Blair. Am. W. W. Assoc. Sept., '29.

British Rainfall, Water Consumption and Water Treatment.* M. N. Baker. Eng. N. R. Sept. 26, '29.

Water Supply from Rainfall on Valley Floors.* Discussion: Harry F. Blaney and C. W. Sopp. Am. Soc. C. E. Oct., '29.

Die Gewinnung von Grundwasser und seine künstliche Erzeugung.* (The Winning of Ground Water and Its Artificial Production.) E. Gross. Gas und Wasser. Sept. 14, '29.

Die Bedeutung A. Thieims für das Wasserversorgungswesen.* (The Importance of A. Thiem in Water Supply.) G. Thiem. Gesund. Ing. Serial beginning Sept. 21, '29.

c. Dams and Reservoirs

Constructing Pardee Dam.* James N. Hatch. Public W. Sept., '29.

Development of Mountain Lake Reservoirs.* W. H. Powell. Eng. Inst. Can. Sept., '29.

American Falls Dam, Minidoka Project, Idaho.* Ivan E. Houk. West. Constr. N. Sept. 25, '29.

The Sluice Discharge Measurements at Assouan.* J. H. Jones. Eng. Sept. 27, '29.

Construction Starts on Concrete Arch Dam on the Deadwood River, Idaho.* (From *New Reclamation Era*.) Hydraulic Eng. Oct., '29.

Spillway Discharge Capacity of Wilson Dam.* Louis G. Puls. Am. Soc. C. E. Oct., '29.

Essential Facts Concerning the Failure of the St. Francis Dam.* Am. Soc. C. E. Oct., '29.

Experiments on Discharge Over Spillways and Models, Keokuk Dam.* Discussion: B. F. Groat. Am. Soc. C. E. Oct., '29.

The Eildon Dam Failure in Australia.* Eng. Oct. 4, '29.

Small Arch Dam Design Governed by Concrete Economy Need.* James Girard, Jr. Eng. N. R. Oct. 10, '29.

Exceptionally Dry Concrete Used on Two Large Dams.* Eng. N. R. Oct. 24, '29.

Bauausführung und Unterhaltung von Staumauern in Schweden.* (Construction and Maintenance of Dams in Sweden.) Z. d. Bauver. Sept. 11, '29.

d. Analysis and Purification of Water

Applying Paris Green as an Anopheline Larvicide.* J. A. Le Prince and H. A. Johnson. (From *Public Health Reports*.) Public W. Sept., '29.

Manganese in the Water Supplies of New Jersey.* Leroy Forman. Am. W. W. Assoc. Sept., '29.

Reduction of Carbonate Hardness by Lime Softening to the Theoretical Limit.* Charles P. Hoover and James M. Montgomery. Am. W. W. Assoc. Sept., '29.

Industrial Water Treatment—Filtration and Lime Soda Plants.* George Cawley. Power Serial beginning Oct. 22, '29.

e. Distribution of Water

Ancient Irrigation Methods Mingled with New in Northern New Mexico.* Charles M. Johnstone. Hydraulic Eng. Sept., '29.

Arizona Water Users Plan Immense Irrigation and Power Program.* Fred T. Colter. Hydraulic Eng. Sept., '29.

Construction of Wanaka Aqueduct.* A. A. Jones. Public W. Serial beginning Sept., '29.

Water Services. D. T. Salmon. Am. W. W. Assoc. Sept., '29.

All-Tunnel, All-Gravity Aqueduct Proposed from Black Canyon to Los Angeles.* Walter Gordon Clark. Hydraulic Eng. Sept., '29.

Denver Water Conduit Extension.* Jos. C. Coyle. Public W. Sept., '29.

Missouri River and Turkey Creek Pressure Tunnels. Charles S. Foreman. Am. W. W. Assoc. Sept., '29.

The First Flange Welded Pipe Line.* Lloyd T. Jones. Am. W. W. Assoc. Sept., '29.

Electrically Welded Pipe Lines.* S. Martin. Am. W. W. Assoc. Sept., '29.

Irrigation Canal and Drainage Ditch Crossings in the Imperial Valley.* J. F. Lamb. Hydraulic Eng. Oct., '29.

Experiments to Determine Rate of Evaporation from Saturated Soils and River-Bed Sands.

Discussion: N. W. Cummings. Am. Soc. C. E. Oct., '29.

The Kempton Park Pumping Station of the Metropolitan Water Board.* Eng. Serial beginning Oct. 4, '29.

f. Drainage of Land

Comparative Results on Drainage Work by Contract and by Federal Forces.* J. R. Iakisch. (From *New Reclamation Era*.) Hydraulic Eng. Oct., '29.

J. Sewerage. Sewage and Refuse Disposal

a. Sewers and Drains

Trench Loadings and Sewer Pipe Foundations. C. R. Compton. (Paper read before School of Citizenship and Public Administration Short Course.) West. Constr. N. Sept. 10, '29.

Modern Construction of Sewers Greatly Increases Carrying Capacity.* Fred C. Scobey. Hydraulic Eng. Oct., '29.

b. Sewage Disposal, Purification

Developments in Sludge Digestion of Sewage Create Widespread Interest.* Clyde C. Kennedy. *Hydraulic Eng.* Sept., '29.

Small Septic Tanks and Their Installation.* *Public W.* Sept., '29.

Sewage Treatment at Birmingham, England.* *Public W.* Sept., '29.

Activated Sludge Practice in United States. *W. W. & Sewer* Sept., '29.

Results of Experiments in Determination of Biochemical Oxygen Demand. Leroy Forman. (Paper read before N. J. Sewage Works Assoc.) *W. W. & Sewer* Sept., '29.

Sewage Treatment by Stream-Flow Aeration.* Harry N. Jenks and Max Levine. (From *Public Health Report*.) *W. W. & Sewer* Sept., '29.

Activated Sludge Plant Operation in Great Britain. A. S. M. Parsons. (Paper read before Royal San. Inst.) *W. W. & Sewer* Sept., '29.

Pre-Determining the Extent of a Sewage Field in Sea Water. Discussion: Warren E. Howland. *Am. Soc. C. E.* Oct., '29.

Pneumatically Placed Concrete in Sewage Plant and Outfall Construction.* A. T. Cassiere. *Hydraulic Eng.* Oct., '29.

Comments on the Design of Sludge Digestion Tanks. Discussion: Richard H. Gould. *Am. Soc. C. E.* Oct., '29.

Progress of Sewage Treatment in North America.* Karl Imhoff. *Eng. N. R.* Oct. 3, '29.

Aerating Sewage.* John L. Mason. *West. Constr.* N. Oct. 10, '29.

Pulverizing and Screening Dried Sewage Sludge.* *Eng. N. R.* Oct. 17, '29.

Improvements in the Imhoff Sewage Settling Tank.* Otto Mohr. *Eng. N. R.* Oct. 24, '29.

Die Emscher-Kläranlage bei Essen-Karnap.* (The Ems Clarification Plant at Essen-Karnap.) M. Prüss. *Gesund. Ing.* Serial beginning Aug. 31, '29.

Eine neue, einfache Belüftungs- und Umläufvorrichtung für Belebtschlamm-Anlagen.* (A New Simple Aerating and Turning Device for Activating Sludge Plants.) Kusch. *Gesund. Ing.* Sept. 14, '29.

L. Electricity**b. Distribution and Transmission of Electricity****1. Power Plants.**

Die Zentralen Klosters, Küblis und Schlappin. Elektrischer Teil.* (The Klosters, Küblis and Schlappin Central Stations. Electrical Part.) Paul Weingart. *Schw. Bauz.* Sept. 14, '29.

d. Mechanical Uses of Electricity**1. Electric Motors**

Gleichstrom-Schnellzugslokomotiven von 5 400 PS der Bahn Paris-Lyon-Méditerranée.* (5 400 HP Direct Current Express Locomotives for the Paris-Lyon-Mediterranean Railroad.) A. Herger. *Schw. Bauz.* Sept. 28, '29.

2. Servomotors, Hoists, Elevators, Handling Machinery

Modern Apparatus for Converting Alternating to Direct Current.* Dock & Harbour Sept., '29.

D.-C. Railway Substation for the Chicago Terminal Electrification, Illinois Central Railroad.* A. M. Garrett. *A. I. E. E.* Sept., '29.

132 000-Volt Transmission Line of the Saint John River Power Company—Grand Falls to Dalhousie, N. B.* R. A. Lawther. *Eng. Inst. Can.* Sept., '29.

3. Welding

Electrically Welded Pipe Lines.* S. Martin. *Am. W. W. Assoc.* Sept., '29.

The First Flange Welded Pipe Line.* Lloyd T. Jones. *Am. W. W. Assoc.* Sept., '29.

f. Signals and Communication

Radio Interference from Line Insulators.* Ellis Van Atta and E. L. White. *A. I. E. E.* Sept., '29.

M. Architecture**a. Educational, Government and Scientific Buildings**

Staatliches Kaiser-Wilhelm-Gymnasium in Berlin-Neukölln.* (State Kaiser-Wilhelm High School in Berlin-Neukölln.) Conrad Beckmann. *Z. d. Bauver.* Sept. 11, '29.

b. Business and Commercial Buildings

San Francisco Stock Exchange Building.* Erie L. Cope. *West. Constr.* N. Sept. 10, '29.

c. Residences, Hotels

Verwaltungsgebäude des Siedlungsverbandes Ruhr-kohlenbezirk in Essen.* (Administration Building of the Housing Association of the Ruhr Coal District in Essen.) Wilhelm Kästner. *Z. d. Bauver.* Sept. 18, '29.

d. Storage Buildings

Design of Modern Cold Storage Warehouse.* F. O. Dufour. *Eng. N. R.* Oct. 3, '29.

g. Other Buildings

Der Kirchenbau.* (Church Construction.) Johannes Biehle. *Z. d. Bauver.* Sept. 25, '29.

h. Roofs, Domes

Covered Stadium at Chicago with Long-Span Roof Trusses.* C. H. Westcott. *Eng. N. R.* Oct. 17, '29.

i. Fire and Earthquake Protection

Effect of Earth Shocks on Structures.* Discussion: M. de Bussy. Am. Soc. C. E. Oct., '29.

x. Miscellaneous

Der Schallschutz im Hochbau.* (Sound Insulation in Tall Buildings.) Eugen Mitchell. Z. d. Bauver. Sept. 25, '29.

O. Administration. Legislation. Economics. Statistics**a. General Legislation**

Vorentwurf zu einer Reichsbauordnung. Zum deutschen Baupolizeitag am 2 September 1929 in Mainz. (Preliminary Draft of a National Building Law. At the Building Police Meeting on September 2, 1929 in Mainz.) G. A. Platz. Z. d. Bauver. Aug. 28, '29.

b. Economic Questions of a General Character, Valuations

Valuation of Public Utilities for Taxation. L. D. McPherson. W. W. & Sewer. Sept., '29. General Contract System Versus Segregated Contracts. Discussion: Ward P. Christie. Am. Soc. C. E. Oct., '29.

d. Administrative and Financial Management of Means of Communication

1. General Questions
Transportation Problems in Modern Cities.* Paul Seurot. Eng. Inst. Can. Sept., '29.

2. Routes and Roads

Railways Versus Waterways: An Economic Comparison.* L. D. Cornish. Am. Soc. C. E. Oct., '29.

Federal Waterway Development. George R. Spalding. Am. Soc. C. E. Oct., '29.

Street Improvement Assessments. Harry Goodridge. West. Constr. N. Oct. 10, '29.

4. Maritime Ports

Water Transportation with Particular Reference to Terminals. Rufus W. Putnam. Am. Soc. C. E. Oct., '29.

Terminal Operation on Federal Barge Line. W. F. Schulz. Am. Soc. C. E. Oct., '29.

5. Railroads and Street Railways

Operating Economics on the Pere Marquette.* Frank H. Alfred. Eng. N. R. Oct. 24, '29.

f. Engineering Ethics

The Ethics of Engineering. Nicholas S. Hill. Am. W. W. Assoc. Sept., '29.

Q. Surveying and Geodesy

Specifications for Transit Traversing and Stadia Leveling. Discussion: W. H. Rayner. Am. Soc. C. E. Oct., '29.

S. City Planning

Highway Problems in the Planning of Metropolitan Areas.* Robert Kingery. (Paper read before Road School of Wis. Highway Comm.) R. & S. Sept., '29.

Hexagonal Planning.* Noulan Cauchon. Inst. Mun. & Co. Engrs. Sept. 17, '29.

County and Regional Planning.* E. A. Howard. Discussion: A. J. Rabuck. (Paper read before City Plan. Div.) Am. Soc. C. E. Oct., '29.

The City Plan of Kenosha, Wisconsin.* W. E. O'Brien. (Paper read before City Plan. Div.) Am. Soc. C. E. Oct., '29.

Legal Problems Involved in Establishing Set-Back Lines. Clifton Williams. Discussion: J. M. Albers. (Paper read before City Plan. Div.) Am. Soc. C. E. Oct., '29.

Co-Operation in the City Planning of Madison, Wisconsin. E. E. Parker. (Paper read before City Plan. Div.) Am. Soc. C. E. Oct., '29.

The Planning of Capital Cities: Denver, Colorado. Discussion: Morris Knowles. Am. Soc. C. E. Oct., '29.

Greater Washington Starts to Rise.* Henry W. Hough. Sci. Am. Oct., '29.

Einzelreihenbau oder Doppelreihenbau.* (Single Series Construction or Double Series Construction.) May and Boehm. Z. d. Bauver. Sept. 4, '29.

T. Oil and Oil Engineering

Le Raffinage du Pétrole Brut. Nécessité de Construire en France de Nouvelles Raffineries.* (Refining Crude Petroleum. The Necessity of Building New Refineries in France.) Gen. Civ. Serial beginning Sept. 7, '29.

Engineering Societies Employment Service

The Engineering Societies Employment Service is under the joint management of the National Societies of Civil, Mining, Mechanical, and Electrical Engineers. A Chicago office is maintained in co-operation with the Western Society of Engineers, and a San Francisco office, in co-operation with the Engineers' Club of San Francisco and the California Section of the American Chemical Society. The Service is available only to the several memberships and is maintained by contributions from the Societies and their individual members who are directly benefited.

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Men Available.—Under this heading, brief announcements will be published without charge. These announcements will not be repeated, except on request received after an interval of one month. Notices for *Proceedings* should be addressed to Employment Service, 31 West 39th Street, New York, N. Y., and should be received prior to the first of the month.

Opportunities.—A Bulletin of engineering positions available is published weekly and may be obtained by members of the Societies concerned at a subscription rate of \$3 per quarter, or \$10 per annum, payable in advance. Positions which are not filled promptly as a result of publication in the Bulletin, may be announced herein.

Placement Fees.—The Service is operated on a co-operative basis, whereby those benefiting contribute in accordance with the following rates: One and one-half per cent. of the first year's salary for permanent positions. Temporary positions, six months or less, 3% of the total salary received, payable monthly.

Replies to Announcements.—Replies to announcements published herein, or in the Bulletin, should be addressed to the key number indicated in each case, with two two-cent stamps attached for re-forwarding, and forwarded to the Employment Service at the address given. Replies received by the Service after the positions to which they refer have been filled, will not be forwarded.

MEN AVAILABLE

CIVIL AND MUNICIPAL ENGINEER, M. Am. Soc. C. E.; Cornell graduate; age 44; married. Ten years, heavy aqueduct and subway construction; nine years, city engineer and engineer-manager in responsible charge of all engineering and municipal work of suburban communities. Desires position with municipality, development company, or consulting engineer. A-717.

ENGINEER, EXECUTIVE, M. Am. Soc. C. E.; graduate civil engineer with degrees; age 39. Broad experience in structural and industrial work, including allied mechanical lines. B-6046.

CHIEF ENGINEER, M. Am. Soc. C. E.; B. S. Mining Engineering; Master's degree, Civil Engineering; age 48. Executive ability, wide technical knowledge, initiative, tact, and balanced judgment known as common

sense. Experience: Airport design, construction, stone quarry plants, asphalt paving plants, piers, wharves, dredging, municipal engineering, railroad construction, coal mining, concrete and steel design, highway construction. B-7544.

CIVIL ENGINEER, Jun. Am. Soc. C. E.; Cornell University degree. Six years' experience, inspection, supervision, design, location, and estimates of highway projects, including design and construction of reinforced concrete bridges. B-7772.

CIVIL ENGINEER, M. Am. Soc. C. E.; twenty-three years' experience in design and construction of steel and reinforced concrete bridges, buildings, etc., railroad and municipal works. Open for position as chief engineer, superintendent, or similar. B-9497.

ENGINEER-SURVEYOR, Jun. Am. Soc. C. E.; married. Capable handling all sub-division work. Expert computer, planner. Two years, Central America. Six years, local. Can manage surveyor's office. Will go anywhere. B-9908.

CHEMICAL ENGINEER, Assoc. M. Am. Soc. C. E.; has had wide experience in concrete construction and in the use of cement. Was in charge of the concrete laboratory of a prominent engineering concern. Has had research experience in cement. At present, employed as a research chemist. C-943.

CIVIL ENGINEER, Jun. Am. Soc. C. E.; age 33; graduate, 1921, Technical University of Norway. Six years' American experience, design, checking, and engineering, reinforced concrete and structural steel industrial buildings, hydro-electric and steam electric plants. In employ of power company and wishes new connection. C-2085.

ENGINEER, M. Am. Soc. C. E.; American; technically trained. Twenty years on hydro-electric, highway, and railroad development, especially location, investigation, estimates, reports, desires engagement. Knowledge of Spanish, American conditions and language. Highest references as to executive, administrative, and engineering qualifications. Just completed engagement as chief engineer of \$8 000 000 project in Colombia. C-3806.

CIVIL AND SANITARY ENGINEER, Assoc. M. Am. Soc. C. E.; married. Twenty years' experience covering water supply, sewage disposal, drainage, paving, and road building. Chief Engineer of oil company; Consultant on Government work. Also experience in utility valuations. Colonel during World War. Willing to go anywhere. Available immediately. C-4866. .

CIVIL ENGINEER, Assoc. M. Am. Soc. C. E.; age 32; married. Eight years' broad experience in design, reinforced concrete and structural steel, airport structures, industrial buildings, statically indeterminate structures, reinforced concrete arches, continuous and movable bridges. Desires responsible position as designing or assistant engineer. Four languages. United States or Europe. C-5983.

CIVIL ENGINEER, Jun. Am. Soc. C. E.; Cornell graduate; age 28; single. Six years' experience hydraulic engineering, irrigation, dams, water supply, drainage, river improvement, port development, investigations, design and construction, reports. Two years, foreign railway location. C-6458.

CIVIL ENGINEER; graduate, 1927; wishes to become connected with contracting organization with chances of advancement. Experience in highway and grade-crossing

structures of reinforced concrete. Willing worker, conscientious, intelligent, with good education and good health. Location desired in United States, preferably. C-6511.

CIVIL ENGINEER, Jun. Am. Soc. C. E.; age 28. Three years at college, studying engineering and architecture. Five years' experience, design, detail of structural steel and plant design, including machine design. Seeks position as designing engineer for chemical or naval stores plants. C-6517.

CIVIL ENGINEER, Jun. Am. Soc. C. E.; A. B., B. S. in C. E.; married; age 29. Structural steel detailer, one summer; three years' experience with present firm in drafting, estimating, surveying, and some design. Structures include armory, banks, bridges, churches, factories, office buildings, schools, warehouses, and cold storage plant. Desires position preferably in Rockland or Westchester Counties, New York, or in New York City. C-6554.

ARCHITECT AND ENGINEER, Assoc. M. Am. Soc. C. E.; age 36; married; with twelve years' construction and designing experience, desires connection with a small firm dedicated to high-class work, in any location specializing in Spanish architecture. Partnership, after mutual exchange of references, desired. Speaks Spanish fluently. C-6565.

GRADUATE CIVIL ENGINEER, Assoc. M. Am. Soc. C. E.; age 30; licensed professional engineer and land surveyor. Four years' experience, highway engineer, Middle West; reconnaissance, location, and land surveying; designing, estimating, and construction for highways and municipal improvements. Three and one-half years with railroad in East, surveying, designing, estimating on grade-crossing elimination. Desires position with contractor, United States. C-6594.

HYDRO-ELECTRIC ENGINEER, Assoc. M. Am. Soc. C. E.; graduate civil engineer; age 32; married. Eleven years' wide experience with two well-known power development companies. Three years, topographic surveying, mapping; two years, construction; two years, drafting; three years, design, economy studies; last year, charge of squad on power plant design. Capable handling responsible details any branch hydro-electric work. Prominent references. C-6600.

STRUCTURAL DESIGNER AND DRAFTSMAN, Jun. Am. Soc. C. E.; age 26; single; B. S. and M. S. in Civil Engineering. Two and one-half years' experience, surveying and mapping, design of reinforced concrete structures and structural steel work. Special training in hydraulic engineering. Desires position as structural designer where good work is appreciated. Available, short notice. Will go anywhere. C-6631.

Membership

(From October 9, 1929, to November 4, 1929)

Additions

HONORARY MEMBERS		Date of Membership.
FISHER, Edwin Augustus. Cons. Engr., 30 Albemarle St., Rochester, N. Y.	M. Hon. M.	July 4, 1888 Oct. 7, 1929
LINDENTHAL, Gustav. Chf. Engr., North River Bridge Co., 26 Exchange Pl., Room 309, Jersey City, N. J.	M. Hon. M.	May 3, 1882 Oct. 7, 1929
SWAIN, George Fillmore. Prof., Civ. Eng., Harvard Univ., Pierce Hall, Cambridge (Res., 1574 Beacon St., Brookline), Mass.	Affiliate M. Hon. M.	Sept. 5, 1883 Mar. 2, 1892 Oct. 7, 1929
MEMBERS		
AFFELDER, Taylor Figgatt. 247-07 Memphis Ave., Rosedale, N. Y.	Jun.	Oct. 14, 1929
ALBRIGHT, Ralph John. Auchenbach Apartments, York and High Sts., Pottstown, Pa.	Jun.	Oct. 14, 1929
ANGAS, Robert Moore. Civ. Engr., 401 Hildebrandt Bldg., Jack- sonville, Fla.	Jun. Assoc. M. M.	Dec. 3, 1913 June 1, 1920 Oct. 7, 1929
BAKER, Wilfred Wilkinson. Engr. and Chf. of Party, Middle Rio Grande Conservancy Dist. (Res., 802 West Lead Ave.), Albuquerque, N. Mex.	Assoc. M.	Oct. 14, 1929
BALDWIN, Orval James. Instr., Eng. Drawing, Univ. of Iowa, Eng. Hall, Univ. of Iowa, Iowa City, Iowa.	Jun.	Oct. 14, 1921
BARDSLEY, Clarence Edward. Asst. Prof., Civ. Eng., School of Mines and Metallurgy, Univ. of Missouri, Box 723, Rolla, Mo.	Assoc. M.	Aug. 26, 1929
BARR, Daniel Hugh. Eng. Asst., New York Telephone Co., 140 West St., New York (Res., 1121 Bedford Ave., Room 310, Brooklyn), N. Y.	Jun.	Oct. 14, 1929
BEACH, Charles Dumbauld. Junior Highway Engr., Div. of Management, U. S. Bureau of Public Roads, Washington, D. C.	Jun.	Oct. 14, 1929
BECKER, Harry Veltman. Asst. City Engr. (Res., 2016 West 19th St.), Oklahoma City, Okla.	Assoc. M.	May 13, 1929
BENAMI, Hiram. 509 West 122d St., New York, N. Y.	Jun.	July 15, 1929
BILOTTA, Nicholas. Rodman, Dept. of Public Works, Borough of Manhattan (Res., 1187 Clay Ave.), New York, N. Y.	Jun.	Oct. 14, 1929
BINGLEY, William McLean. Box 47, Salem, Ohio.	Jun.	Oct. 14, 1929
BLAKE, Charles Townsend. 540 Park Rd., Ambridge, Pa.	Jun.	Oct. 14, 1929
BOLTER, Ward Henes. 850 Park Ave., New York, N. Y.	Jun.	Oct. 14, 1929
BREITZKE, Charles Frederick. Cons. Engr.; Engr., New Jersey Meadows Reclamation Comm., 462 Broad St., Room 202, Newark (Res., 412 William St., Boonton), N. J.	Assoc. M. M.	Sept. 12, 1916 Oct. 14, 1929
BRINKER, Russell Charles. 1020 Bushkill St., Easton, Pa.	Jun.	Oct. 14, 1929
BRODIE, Hugh. Associate Prof., Geodesy and Surveying, Univ. of Michigan (Res., 611 Forest Ave.), Ann Arbor, Mich.	M.	Oct. 14, 1929
BROOKS, Leo Chester. 416 New York Ave., Sheboygan, Wis.	Jun.	Oct. 14, 1929
BROWN, J. Knox. Steel Insp., Port of New York Authority, New York (Res., 119-37 Metropolitan Ave., Kew Gardens), N. Y.	Jun.	May 13, 1929
BROWN, Robert Moore. Seaborg Hotel, Raton, N. Mex.	Jun.	Oct. 14, 1929
BROWN, William McKenzie. City Engr. (Res., 703 North 25th St.), East St. Louis, Ill.	M.	Oct. 14, 1929
BROWNELL, Walter Keith. Structural Engr., Philadelphia Impvts., P. R. R., Room 137 Broad St. Station, Philadelphia, Pa.	M.	Oct. 14, 1929
BUCKINGHAM, Earl Mowbray. Associate Engr., U. S. Geological Survey, Sacramento, Calif.	M.	Oct. 14, 1929
BURKE, Walter Anthony, Jr. Office Asst. Engr., Thomas Crimmins Contr. Co. (Res., 727 Park Ave.), New York, N. Y.	Assoc. M.	Oct. 14, 1929
BUTLER, John Henderson. 475 Washington Ave., Bridgeport, Conn.	Jun.	Oct. 14, 1929
CLELAND, Ralph Rankin. San. Engr., Pennsylvania State Coll., Kappa Sigma Fraternity, State College, Pa.	Jun.	Oct. 14, 1929
COLLINS, Lawrence Arthur. Junior Asst. Engr., Grade 2, State Dept. of Public Works; 806 Stanley St., Schenectady, N. Y.	Jun.	Oct. 14, 1929
COOPER, Robert Lee. City Mgr. and City Engr. (Res., 907 West Fruit Ave.), Albuquerque, N. Mex.	M.	Oct. 14, 1929
COX, Moses Eugene. Res. Engr., State Highway Dept., Box 53, Ellijay, Ga.	Assoc. M.	Oct. 14, 1929
CRANE, Theodore. Associate Prof., Bldg. Constr., Sheffield Scientific School, Yale Univ., Winchester Hall, New Haven, Conn.	M.	Oct. 14, 1929
CREEDON, James Joseph. 15420 Myrtle Ave., Harvey, Ill.	Jun.	Oct. 14, 1929
CROSBY, Irving Ballard. Cons. Eng. Geologist, 6 Beacon St., Boston, Mass.	Affiliate	Oct. 14, 1929
CUNNINGHAM, Charles Wesley. Instr., Dept. of Civ. Eng., Rutgers Univ. (Res., 32 Sanford St.), New Brunswick, N. J.	Assoc. M.	Oct. 14, 1929
CURTIN, Clement George. King Ferry, N. Y.	Jun.	Oct. 14, 1929

MEMBERS—(Continued)

		Date of Membership.
DANZER, John.	403 Bridge St., Gary, Ind.	Jun. Oct. 14, 1929
DAVIDS, Adolf Carl.	With Ford, Bacon & Davis, 39 Broadway, New York, N. Y. (Res., 192 South St., Morristown, N. J.)	Assoc. M. Oct. 14, 1929
DAY, Clarence Raymond.	Asst. Engr., Met. Dist. Water Supply Comm., 24 School St., Boston (Res., 71 Bartlett Ave., Arlington, Mass.)	Assoc. M. Oct. 14, 1929
DETWILER, Harry Espenship.	Chf. Engr., Anthracite Bridge Co. (Res., 547 Wheeler Ave.), Scranton, Pa.	M. Oct. 14, 1929
DOWNER, Garland Burdette.	Kersley, Colo.	Jun. Oct. 14, 1929
DUNN, Allison van Vliet.	Asst. Civ. Engr., U. S. National Park Service, 409 Underwood Bldg., San Francisco, Calif.	Jun. May 28, 1923
DUNN, James Edwin.	Field Engr., Portland Cement Assoc., 610 Cotton States Bldg., Nashville, Tenn.	Assoc. M. Oct. 14, 1929
DURKEE, E Leland.	Engr. of Erection, McClintic-Marshall Co.; 288 Le Moyne Ave., South Hills Branch, Pittsburgh, Pa.	Jun. June 10, 1929
EHRLICH, Robert Lee.	Eureka, Mo.	Assoc. M. Oct. 14, 1929
EPPS, George Lasley.	900 North 8th St., Kansas City, Kans.	Jun. Oct. 14, 1929
ERICKSON, Arioach Wentworth, Jr.	Greystone House, Swampscott, Mass.	Jun. Oct. 14, 1929
ERICKSON, David Leonard.	City Engr., City Hall, Lincoln, Nebr.	Assoc. M. Sept. 9, 1919
FISCHER, Harold.	Asst. to Res. Engr., State Dept. of Public Works, Babylon (Res., 15 Marcy Pl., New York), N. Y.	M. Oct. 14, 1929
FISHER, Clark Ernest.	Pine Grove, Calif.	Jun. Oct. 14, 1929
FLEMING, Anthony.	50 Bellevue St., Lawrence, Mass.	Jun. Oct. 14, 1929
FRANCIS, George Walden.	Mgr., The Francis Eng. Co., 204 Eddy Bldg., Saginaw, Mich.	Assoc. M. Oct. 14, 1929
FYFE, William G.	With Board of County Road Commsrs., 3800 Barlum Tower, Detroit (Res., 249 Brady St., North, Dearborn), Mich.	Jun. Oct. 14, 1929
GIDLEY, Harry Kenneth.	Box 138, Morgantown, W. Va.	Jun. Oct. 14, 1929
GILES, John Henry Latham.	Asst. Engr., State Dept. of Health, 8 Washington St., Hartford, Conn.	Jun. Oct. 14, 1929
GIROLAMO, Thomas Di.	393 Lake St., Newark, N. J.	Jun. Oct. 14, 1929
GRENNAN, Charles Andrew.	275 Marshall, Gary, Ind.	Jun. Oct. 14, 1929
GROCHAU, Earl Henry.	Constr. Engr.-Supt., E. G. Holladay Co., 802 Martin Bldg., Birmingham, Ala.	Jun. July 16, 1928
GROSS, Joseph Watson.	Municipal and Reclamation Engr., 1029 Forum Bldg., Sacramento, Calif.	Assoc. M. Oct. 14, 1929
GUINN, Rembert Shields.	Asst. Office Engr., State Highway Dept. (Res., 602 West 16th St.), Austin, Tex.	Jun. Sept. 1, 1908
HALE, Fred Earl.	Asst. Designing Engr., Alabama Power Co., Birmingham, Ala.	Assoc. M. Oct. 1, 1913
HALL, Wendell Gray.	728 Don Diego St., Santa Fe, N. Mex.	M. Oct. 14, 1929
HARTIG, Franz John.	3730 Winterbourne Rd., Baltimore, Md.	Jun. Oct. 14, 1929
HECKLER, Wilbur Leroy.	2 South Clinton Ave., Trenton, N. J.	Jun. Oct. 14, 1929
HIRSCH, Leo Joseph.	Engr., John Monks & Sons, 438 Broadway, New York (Res., 415 Madison St., Brooklyn), N. Y.	Jun. June 10, 1929
HOLFELDER, Joseph Bernerd.	City Engr., Room 26, City Hall, Bakersfield, Calif.	Assoc. M. Oct. 14, 1929
HOUGH, Laurence Cooper.	Dist. Mgr., Plotometer Co., 77 Summer St., Room 910, Boston, Mass.	Assoc. M. July 11, 1921
HOYT, Kenneth.	Engr., Wm. V. Kiehnle Co. (Res., 3871 Sedgwick Ave., Apartment 4-I), New York, N. Y.	M. Oct. 7, 1929
IMBERTSON, Norman Melvin.	With Dept. of Water and Power, Los Angeles, Calif.	Jun. Oct. 14, 1929
ISRAEL, Charles Stanley.	Designer, United Engrs. & Constructors (Res., 6200 Wayne Ave.), Philadelphia, Pa.	Assoc. M. Oct. 14, 1929
IVICHIEVICH, Frank Marion.	Box 363, Middletown, N. Y.	Jun. Oct. 14, 1929
JACKSON, Angus.	92 Rossiter Ave., Yonkers, N. Y.	Jun. Oct. 14, 1929
JACOBI, Thomas Richard.	Care, Ulen & Co., 124 East Washington, Lebanon, Ind.	Jun. Oct. 14, 1929
JACOBSON, Joel Martin.	Care, Fairchild Airplane Mfg. Corporation, Farmingdale, N. Y.	Jun. Oct. 14, 1929
JAMES, Chester Adam.	815 Orange Grove Pl., South Pasadena, Calif.	Jun. Oct. 14, 1929
JASPER, Edward Henry.	3063 Henshaw Ave., Cincinnati, Ohio.	Jun. Oct. 14, 1929
JENCKS, William Leavens.	542 South Broadway, Room 615, Los Angeles, Calif.	Jun. Oct. 14, 1929
KAY, Carnig.	Transitman, Springfield Water Works, Cobble Mt. Camp, Westfield, Mass.	Jun. Oct. 14, 1929
KEEFE, William Joseph.	Chf. Engr., Dept. of Public Utilities, Commonwealth of Massachusetts, 167 State House, Boston, Mass.	M. Oct. 14, 1929
KEENE, Philip.	Asst. Engr., Marcus Contr. Co. (Res., 27 West 44th St.), New York, N. Y.	Jun. Oct. 14, 1929

MEMBERS—(Continued)

		Date of Membership.
KINCAID, Murland. Engr. and Bldg. Consultant, New York and New Jersey Common Brick Assoc. (Res., 175 West 93d St.), New York, N. Y.	Assoc. M. M.	Nov. 9, 1920 Oct. 7, 1929
KING, Robert Callen. Eng. Div., Atmospheric Nitrogen Corporation, Hopewell, Va.	Assoc. M.	Oct. 14, 1929
KNOX, John James. 5229 Skillman Ave., Woodside, N. Y.	Jun.	Oct. 14, 1929
KOHL, John Clayton. 3502 Clifton Ave., Cincinnati, Ohio.	Jun.	Oct. 14, 1929
KUPHAL, Henry Emil. Asst. Designing Engr. and Chf. Draftsman, Bridge Dept., State of California (Res., 2223 E St.), Sacramento, Calif.	Assoc. M.	Oct. 14, 1929
LANE, Kenneth Stacy. 182 East Argyle St., Valley Stream, N. Y.	Jun.	Oct. 14, 1929
LARSEN, Richard Thorsten. 464 Arlington Ave., Elgin, Ill.	Jun.	Oct. 14, 1929
LESSIG, Lester L. Contr. Engr., McClintic-Marshall Co., 1201 Morris Bldg., Philadelphia, Pa.	Assoc. M.	Oct. 14, 1929
LEWIS, William Gordon. Mt. Eccentric, The Plains, Va.	Jun.	Oct. 14, 1929
LINDEBLOM, Martin Albert. 322 Woodland Rd., Sewickley, Pa.	Jun.	Oct. 14, 1929
LONGWELL, John Stalker. Div. Engr., East Bay Municipal Utility Dist. (Res., 655 Santa Ray Ave.), Oakland, Calif.	Jun.	Oct. 3, 1911
LOTHES, Herbert George. Supt. of Constr., The Kroger Grocery & Baking Co., 817 Main St., Cincinnati, Ohio.	Assoc. M.	May 12, 1919
LOWNES, Edward Datesman. Junior Civ. Engr., Eng. Dept., City of Los Angeles, Los Angeles (Res., 1232 Sixteenth St., Santa Monica), Calif.	M.	Oct. 14, 1929
LUNDY, Thomas Emmett. Asst. Engr., H. L. Thackwell, 108 East Woodrow, Jacksonville, Tex.	Jun.	Oct. 14, 1929
MCNEW, John Thomas Lamar. Prof., Highway Eng., Agrl., and Mech. Coll. of Texas, Box 141, Faculty Exchange, College Station, Tex.	Assoc. M.	May 13, 1929
MCNIVEN, John Alexander. Prin. Asst. Engr., Elec., Mech. and New Constr. Depts., Board of Comms., Port of New Orleans, 2 Canal St., New Orleans, La.	M.	Oct. 14, 1929
MARTIN, Arthur. Rodman, Dept. of Public Works, New York (Res., 539 Eighty-first St., Brooklyn), N. Y.	Jun.	Oct. 14, 1929
MAULDIN, Earle. Engr., Park Mfg. Co., Box 423, Charlotte, N. C.	Assoc. M.	Jan. 13, 1919
MAYER, Ronald Hahn. 1256 Victoria Ave., New Kensington, Pa.	M.	Oct. 7, 1929
MILES, Henry James. Care, T. J. Green, 226 Benner St., Highland Park, N. J.	Jun.	Oct. 14, 1929
MILLER, Charles Corwin. Surv.-Civ. Engr. (Miller & Hesselberger), 333 West 2d St., Los Angeles (Res., 323 South Granada Ave., Alhambra), Calif.	Assoc. M.	Oct. 14, 1929
MILO, George Eugene. 45 East Seneca St., Oswego, N. Y.	Jun.	Oct. 14, 1929
MOODY, Morris Cross. Care, Dept. of Water Supply, 235 Wessen St., Pontiac, Mich.	Jun.	Oct. 14, 1929
MOORMAN, Robert Burrus Buckner. 109 East Springfield, Champaign, Ill.	Jun.	Oct. 14, 1929
MORAVA, John Hall. 2040 Sheridan Rd., Evanston, Ill.	Jun.	Oct. 14, 1929
NELSON, Frank Kjeld. 731 Forest St., Reno, Nev.	Jun.	Oct. 14, 1929
NEWPORT, Marshall Ross. 319 Exchange Bldg., Portland, Ore.	Jun.	Oct. 14, 1929
NICOLET, Justin. Civ. Engr., V. D. Simons, Inc., 2021 Tribune Tower, Chicago, Ill.	Assoc. M.	Oct. 14, 1929
ORTOLANI, Lawrence. 1417 North Ballinger St., Fort Worth, Tex.	Jun.	Oct. 14, 1929
OSBORN, Lewis Knowles. 119-21 Metropolitan Ave., Kew Gardens, N. Y.	Jun.	Oct. 14, 1929
PARKS, Walter John, Jr. 105 East Congress St., Lincoln, N. C.	Jun.	Oct. 14, 1929
PAUSTIAN, Raymond George. 2032 Dixwell St., Davenport, Iowa.	Jun.	Oct. 14, 1929
PEIL, John Herbert. Box 476, Caldwell, N. J.	Jun.	Oct. 14, 1929
PERRY, Anthony John. 51 Chelmsford St., Dorchester, Mass.	Jun.	Oct. 14, 1929
PICKET, David. 365 West End Ave., New York, N. Y.	Jun.	Oct. 14, 1929
PONS, Francisco. Cons. Engr. (Res., 54½ Ponce de Leon Ave.), Santurce, Porto Rico.	M.	Aug. 26, 1929
PRATT, Robert Barton. Draftsman and Designer, R. O. Jameson, 1005 Southwestern Life Bldg., Dallas, Tex.	Assoc. M.	Oct. 14, 1929
PROFFITT, Gordon Harrison. 5325 Lawton Ave., Oakland, Calif.	Jun.	Oct. 14, 1929
QUICK, Ray Stevens. Asst. Engr., Bureau of Bridges, Allegheny County Dept. of Public Works, Box 785, Pittsburgh, Pa.	Assoc. M.	Apr. 7, 1915
RABINOVITZ, Jacob. Junior Engr., Board of Transportation, New York (Res., 129 Tapscott St., Brooklyn), N. Y.	M.	Oct. 7, 1929
REEVES, James Edson. 828 River Drive, Bettendorf, Iowa.	Jun.	Oct. 14, 1929
RIDGWAY, Edmund Thomson. Mullica Hill, N. J.	Jun.	Oct. 14, 1929
RIGGIO, Gabriel. 295 Leslie St., Newark, N. J.	Jun.	Oct. 14, 1929
RILEY, John Philip. Constr. Engr., Parklap Constr. Corporation, 217 Woodward Ave., Detroit, Mich. (Res., 434 Giles Boulevard, West, Windsor, Ont., Canada).	Assoc. M.	Oct. 14, 1929

MEMBERS—(Continued)

		Date of Membership.
ROBBINS, Franklin Henry. Designing Engr., Board of Water Supply, 2200 Municipal Bldg., New York, N. Y.	} Assoc. M. M.	July 10, 1907 Oct. 7, 1929
ROBINSON, Carl Walter. 1724 Hartshorn Rd., Suite 3, East Cleveland, Ohio.	Jun.	Oct. 14, 1929
ROBINSON, Frank Sidney. (Polk & Robinson) (Res., 4444 Frances Willard Ave.), Chico, Calif.	} Assoc. M. Oct. 14, 1929	
ROONEY, Joseph Anthony. Asst. Engr., The Port of New York Authority, 75 West St., New York (Res., 528 Seventy-eighth St., Brooklyn), N. Y.	Jun.	Oct. 14, 1929
ROOS, Sigmond. Bldg. Supt., A. Wilson Wylie, Brooklyn (Res., 15 West 123d St., New York), N. Y.	Jun.	Oct. 14, 1929
ROSE, Ralph Stanley. Box 438, Sacramento, Calif.	Jun.	Oct. 14, 1929
ROTHSCHILD, Robert Barnet, Jr. 2532 Piedmont Ave., Berkeley, Calif.	Jun.	Oct. 14, 1929
RUFF, Charles Frederick. With Malcolm Pirnie, 25 West 43d St., New York, N. Y.	Jun.	Oct. 14, 1929
RULLAN, Frank. Structural Designer, Union Carbide & Carbon Corporation, 30 East 42d St., New York (Res., 109-98 Two hundred and fourth St., Hollis), N. Y.	Jun.	Oct. 14, 1929
RUTH, James Anderson. Draftsman, Am. Bridge Co. (Res., Knights of Columbus Hotel), Gary, Ind.	Jun.	Oct. 14, 1929
SAUER, Arthur Albert. Structural Engr. with Los Angeles County Archt. (Res., 8164 Waring Ave.), Los Angeles, Calif.	Assoc. M. Oct. 14, 1929	
SCHECTER, Isidore Aaron. 1313 Fulton Ave., New York, N. Y.	Jun.	Oct. 14, 1929
SCHEGOLKOV, Victor K. 5231 Eleventh Ave., N. E., Seattle, Wash.	Jun.	Oct. 14, 1929
SCHWEDLER, Gustave Carl. Draftsman and Detailer, Mosher Steel & Machinery Co. (Res., 533 South Beckley Ave.), Dallas, Tex.	Jun.	Oct. 14, 1929
SCOTT, Halleck McGinnis. Civ., Min. and Cons. Engr. (Scott & Bonner), Beckley, W. Va.	Assoc. M. M.	April 19, 1920 Oct. 7, 1929
SCOTT, Robert Howard. Traveling Representative, Allen J. Saville, Inc., Elec. Bldg., Richmond, Va.	Assoc. M. Oct. 14, 1929	
SHAFER, George Elmer. Engr. of Tests, The Armclo Culvert Mfrs. Assoc. (Res., 508 Crawford St.), Middletown, Ohio.	Jun.	Oct. 21, 1924
SMRHA, Robert Vaclav. Junior Engr., U. S. Geological Survey (Res., 1253 Harrison St.), Topeka, Kans.	Assoc. M. Oct. 14, 1929	
SNYDER, Raymond Agustus. Rodman, B. & O. R. R. (Res., 2727 Pennsylvania Ave.), Baltimore, Md.	Jun.	Oct. 14, 1929
SOELBERG, Leif. Draftsman, Pennsylvania Power & Light Co. (Res., 41 North 13th St.), Allentown, Pa.	Jun.	Oct. 1, 1926
SOLARSKI, John Edward. 122 East 7th St., New York, N. Y.	Assoc. M. Oct. 14, 1929	
SPALDING, Albert Kingsley. White Dormitory No. 1, Rensselaer Polytechnic Inst., Troy, N. Y.	Jun.	Oct. 14, 1929
STOLL, Alfred Phillip. 9 North Main St., Hornell, N. Y.	Jun.	Oct. 14, 1929
STUMPF, Erwin George. 316 Seymour Ave., Newark, N. J.	Jun.	Oct. 14, 1929
SUNDSTROM, Charles Alfred. With Portland Cement Assoc.; 1028 Lancaster Ave., Syracuse, N. Y.	Assoc. M. Oct. 14, 1929	
SUTTIE, Roscoe Henry. Associate Prof., Civ. Eng., Yale Univ. (Res., 35 Mill Rock Rd.), New Haven, Conn.	M. Oct. 14, 1929	
TAYLOR, Elbert John. Res. Engr., Morris Knowles, Inc., Pittsburgh, Pa. (Res., Y. M. C. A., Lynn, Mass.)	Assoc. M. July 15, 1929	
TESSITOR, Ernest. 322 Woodland Rd., Sewickley, Pa.	Jun.	Oct. 14, 1929
THEILL, Kaj. Reinforced Concrete and Structural Steel Designer, H. J. Brunnier, Sharon Bldg. (Res., 1105 Bush St.), San Francisco, Calif.	Assoc. M. Oct. 14, 1929	
THOMAN, William Hall. Instr., Eng. Drawing and Descriptive Geometry, Univ. of Colorado (Res., 1509 Arapahoe), Boulder, Colo.	Assoc. M. Oct. 14, 1929	
TOPERZER, Frank Michael. With Truscon Steel Co., 260 Tremont St., Boston (Res., 106 Damon Rd., Medford), Mass.	Jun.	Oct. 14, 1929
TORREY, George Armstrong. 28 Seventh Ave., New York, N. Y.	Jun.	Oct. 14, 1929
TRINKLE, Robert Hiawatha. Leipsic, Ind.	Jun.	Oct. 14, 1929
VALERIUS, Herman Pomeroy. Chf. Engr., H. J. Gildred Co., Inc., Lima, Peru.	Assoc. M. April 15, 1929	
VAN FLEET, Walter Anthony. 215 West 23d St., New York, N. Y.	Jun.	Oct. 14, 1929
VAN PRAAG, Alex, Jr. Cons. Engr. (Holbrook, Warren & Van Praag, Inc.), 416 Millikin Bldg., Decatur, Ill.	Assoc. M. Oct. 7, 1929	
VAUGHT, Walter Augustus. Prin. Asst. to Jas R. Rhyne, Box 81, Corning, Ark.	Assoc. M. June 1, 1925	
VOTAW, Francis Edgar. Engr., Truscon Steel Co., Boston (Res., 125 Russell St., Atlantic), Mass.	Assoc. M. Oct. 7, 1929	
WADDELL, Louis Morton, Jr. Cost Engr., Dwight P. Robinson, Inc., New York (Res., 1 Stonelea Pl., New Rochelle), N. Y.	Jun.	Oct. 14, 1929
WAGNER, Alfred. 1239 Nostrand Ave., Brooklyn, N. Y.	Jun.	Oct. 14, 1929
WHANNEL, Raymond Leonald. Engr., City Water, Light & Power Dept. (Res., 1544 West Cook St.), Springfield, Mass.	Assoc. M. Aug. 30, 1926	
	Assoc. M. Oct. 14, 1929	

MEMBERS—(Continued)		Date of Membership.
WHEATCROFT, Henry Belcher, Jr. Engr., Township of North Bergen, N. J., North Bergen, N. J. (Res., 166 West 72d St., New York, N. Y.)		Jun. June 6, 1911
WHINNERAH, Richard Walter, 1575 Adams St., Denver, Colo.	Assoc. M.	Aug. 31, 1915
WHIPPLE, Horton, (Whipple Eng. Co.), 183 North Madison, Monrovia, Calif.	M.	Oct. 7, 1929
WHITEHOUSE, Samuel Cedric, With Koppers Constr. Co. (Res., 1421 Severn St.), Pittsburgh, Pa.	Jun.	Oct. 14, 1929
WILKINSON, Jackson Heath, Structural and Hydr. Designer, Morgan Eng. Co., Dallas, Tex.	Assoc. M.	Oct. 14, 1929
WILLIAMS, Gordon Ryerson, 405 West Oak St., Louisville, Ky.	Jun.	Oct. 14, 1929
WILSON, Roy Heath, Bridge and Harbor Engr., City of Miami (Res., 1425 South West 11th Terrace), Miami, Fla.	Assoc. M.	Nov. 4, 1914
WINGO, James Francis, Structural Steel Detailer, Am. Bridge Co., Pencoyd (Res., 5722 Greene St., Philadelphia), Pa.	M.	Oct. 14, 1929
WINTER, Carroll Cornelius, Field Draftsman, S. P. R. R. Care, H. I. Benjamin Martinez, Calif.	Jun.	Oct. 14, 1929
WYATT, Bradley William, Associate Engr., Burns-McDonnell-Smith Engr. Co., 422 Western Pacific Bldg., Los Angeles (Res., 6438 Rita Ave., Huntington Park), Calif.	Jun.	Oct. 14, 1929
YOUNG, ARRIGO MAZZUCATO, Archt. and Engr. (Schack, Young & Myers), 511 Central Bldg., Seattle, Wash.	Assoc. M.	July 15, 1929
ZACK, Raymond Raynor, Dist. Engr., State Highway Comm. (Res., 211 Sixth St., N. W.), Mason City, Iowa	M.	Oct. 14, 1929
	Assoc. M.	July 9, 1923
	M.	Oct. 7, 1929

Reinstatements

ASSOCIATE MEMBERS	Date of Reinstatement.
PLUM, Svend Munk.	Oct. 8, 1929
McFADDEN, Henry Samuel.	Oct. 30, 1929

Resignations

ASSOCIATE MEMBERS	Date of Resignation
PETERSON, John W.	Oct. 7, 1929

Deaths

ASH, Henry Clarke. Elected Member, October 3, 1906; died June 20, 1929.
 BROWN, Robert. Elected Member, November 21, 1921; died October 20, 1929.
 FRINK, Fred Goodrich. Elected Associate Member, May 3, 1899; died September 30, 1929.
 HARDAWAY, Benjamin Hurt. Elected Member, October 7, 1903; died December 13, 1928.
 NELSON, Archy Magill. Elected Member, October 4, 1910; died June 26, 1929.

Total Membership of the Society, November 4, 1929

Members	5 640
Associate Members.....	5 985
Corporate Members.....	11 625
Honorary Members.....	18
Juniors	2 182
Affiliates	142
Fellows	7
Total.....	13 974